

July 17, 1965
Piedras Blancas

6:00 a.m. Ca. 8050 ft. Region scrubby vegetation. Cloudy.
Some fog

See lots of nuthatches, apparently fuscater, alone. 5-15 ft

up.
Blue 1 Then see nuthatch Blue Diglossa (juv Cy ??? Coer ???) in bush
4 ft up. Silent and alone

Very little bird song at first. Then some Diglossa type sounds begin. Probably Albis and Coers

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

3 ADDITION: At some time early this morning, Humberto Alvarez saw BYB's in a tree (either the same birds twice, or 2 birds not close together). Apparently quite alone.

Albis
Coer COMMENT: I saw remarkably few birds today!!! Possibly there were a lot of birds around in the neighborhood which I failed to see — but I doubt it. The Albis, Coer(s), and Sooty Thrushes which were present were quite conspicuous, and quite vocal. But I did not hear many vocalizations of other species.

The apparent sparsity of the fauna here is really quite surprising. Much of the scrub looks eminently suitable for many species. But perhaps the fact that almost all the local trees are conifers (and almost all exotic) has a "discouraging" effect ???

Absolutely no mixed flocks of any kind were seen. This is surprising because the area certainly is near a "frontier", and large mixed flocks were seen in nearby areas in 1962. Also surpris-

ing because some of the local species (*Diglossa* spp., BYB's, Blue & B. Cakes, *Parulicorvus* spp.) occur in mixed flocks in many other areas.

Possibly the birds were less active than usual today because of the very cold and windy weather ???

Possibly the apparent absence of mixed flocks here is evidence that such flocks are formed only when populations are dense ???

Can
also Possibly the apparent absence of mixed flocks is correlated with breeding ??? Certainly the Coereb's and Albis here are singing frequently enough to suggest that they are in, or near, breeding condition. And I saw one pair of *Tiaris olivacea* perform an apparently successful copulation this morning.

In any case, the behavior of the birds this morning would suggest that the formation of mixed flocks is not inevitable under frontier conditions.

According to my local informants, it is full "dry" season here now. Rains stop at end of May or in June.

July 18, 1965
Santa Elena

Arrive one of the areas where I worked in 1962, 8300 ft, 5:25 am. Just starting to get light. Quite a lot of bird sounds. Largely Audubon Sparrows, I think.

Area of scattered open fields, patches second growth scrub, patches of forest.

By 5:35 am, other species of birds are singing. Including *Tiaris* and hummingbirds. But apparently no *Diglossini*.

Weather today is clear but windy

Absolutely nothing of interest yet 6:05 a.m.

See a couple of Sooty Thrushes. 10-15 ft up in second growth trees. Silent and alone.

There are almost no flowers around here

6:15 a.m. See a pair of Whitestarts, apparently alone, 20 ft up in large tree. Can't see birds well enough to be absolutely sure of species. But cert. only with yellow cheeks. Presumably a Yellow-faced or one of the Spectacled types. Apparently uttering occasional song phrases. Yes! Rather Laf-like song. No other birds audible at the time.

Going down into scrub, hear quite a lot of bird sounds. Whitestart phrases, miscellaneous R's, others. Sounds as if a mixed flock might be forming. But I can't actually see the birds.

As far as I can tell, Whitestart songs seldom or never overlap anything else.

6:29 a.m. See single Atlapetes rufinucha 2 ft up in second growth scrub under tall bushes. Probably another rufinucha nearby. Hear what sounds like Atlapetes "quoting" Twitter. The visible bird disappears almost immediately. Apparently alone while under observation. But in same general area where I heard a variety of noises a few minutes earlier. This (ese) rufinucha(s) certainly not in highly integrated flock, but perhaps hanging about in neighborhood other species.

A minute later, see single ♂ Albi in low scrub, 2 ft up, only 10 yards away. Silent and apparently alone. This scrub is not under trees (although there are rather small trees not very far away).

Probably, the Albis and Granguits here were alternating their R's earlier this morning. But, if so, I was unable to differentiate but

* WCC record very dubious. Individual may have been another species. Possibly T. heinei???

(178)

when the sounds of the two species.

I 10
2 But diffuse. Includes a pair of Whitetails (same birds seen before),
3 at least 1 Cy, at least 1 BYB, possibly 1 ♀ WCC (!)*, lots of others.
Others Tangara-types. Blue and Blacks and, probably, others. Edge
large patch woods. In trees and bushes 5-20 ft up. BYB f →
group. Cy f → group. Whitetails sing quite frequently. Cy
sings at least 1 phrase. Rapid Twitter composed of many notes, very
"formless". Little or nothing in way of Intro patterns. Very different
from Coer songs heard yesterday. Cy does not overlap Whitetails.

Tangara types eventually fly off into adjacent conifers. Land
high up in trees. Other birds do not follow.

7:05. Same group. Whitetails feeding 20 ft up in arboreal mela
stone. Also singing frequently. Get quite good view of them. Orange yell
ow forehead. Pure yellow front of face. Black coming forward to cover
rear third or quarter of cheeks. At least one individual appears to hav
e white spot or streak in black behind cheek. Obviously a species I ha
ve seen before. I shall call it "Yellow-faced" for time being.

No other birds very close to Whitetails at this time. But
lots of bird noises in scrub and trees in all directions, all around,
20-50 ft away. Whitetails fly off into distant trees. A group
6 of 3 Cyanocapla f → Whitetails. (Probably also some
Tangaras.)

20 It looks as if the behavior of the birds in this region now is
much the same as in 1962. (Altho I do not remember seeing mixed
flocks in this particular spot before.)
7:15. See single Sooty Thrush in conifers where some of the

(79)

Tangaras which were with flock earlier seem to have remained. But the thrush and the tanagers seem to be ignoring one another. The thrush eventually flies off. Other birds do not follow.

7:25 a.m. Flock as a whole has moved on. Back in direction from which it came.

Go along road a few hundred yards. Come across another mixed flock. In trees, 15-25 ft up. Group includes at least 3 or 4 individuals. Can't identify them all. At least 1 Chlorospingus (apparently BCBT), 1 Cy. Cy sings repeatedly. Long formless twittering phrases. Chlorospingus quiet. Cy flies off. Other birds do not follow.

7:40 a.m. Come across yet another mixed flock. Includes 2 Yellow-faced Whitetails (I see the white spots on black behind cheeks very clearly in these individuals), at least 1 Cy, at least 1 vireo (Brown-capped?). All 8-12 ft up in second growth scrub. There also is a rustnut nearby, but I don't think that it is paying much attention to the other birds (or vice versa). Whitetails utter "CN"s, but no song. Cy utters lots of long phrases. Long formless Twitters with "Tsit tsit" or "Tseet tseet" Intro Notes.

See another single sooty Thrush alone

Everything very dead now

Leaving 8:40 a.m.

Go along road to another area 8400 ft. Arrive 8:45 a.m. Everything very quiet here too

See a single Green Jay (!) along edge sparse second growth forest. Some distance away, I see pair of Hate-throated Whitetails feeding on berries of melastome tree. 15 ft up. Utter "CN"s, "SHN"s, and R's which seem to be accelerated series SHN's. Apparently quite alone.

(Incidentally, earlier this morning, in general region where I saw mixed flocks with Yellow-faced Whitestarts, I thought I heard occasional Slate-throat songs as well. If so, the songs of the 2 species of Whitestarts probably did not overlap.)

A few seconds later, see same pair Slate-throats associating with 2 or more BCBT's (identification definite) in adjacent trees. All birds 10-20 ft up. BCBT(s) utter(s) occasional R's. Then group moves off. Can't see who is leading who.

Are Slate-throats Allogregarious here, as in Western Cordillera?

Leaving 9:15 AM

COMMENT:

Looking over my 1962 notes, I realize that the resemblance between the mixed flocks here now and the flocks observed in the same place earlier is even greater than I thought. Some of the flocks seen in 1962 also were diffuse. And at least one of the 1962 flocks also included Slate-throats.

This is very good evidence that social behavior tends to be stable over periods of at least several years. (Viz. also observations in the Eastern Cordillera)

In general, the social behavior of the birds here resembles that of the birds on Purace' — except that the flocks here are more diffuse. In this connection, it is well to remember that the number of species seems to be much smaller here than in Purace'. This suggests two conclusions: (1) The frequency with which mixed flocks are formed is independent of the number of species present in an area. (2) The cohesiveness of mixed flocks, on the other hand, is positively correlated with the number of species present and/or dependent upon the presence of partic

ular species.

One factor which may (or must) contribute to the diffuseness of the flocks here is the absence or rarity of many species of tanagers (e.g. Cnemidocoptes, Hemipingus spp.). Possibly these tanagers (like the commensal Conirostrum spp. — see today's notes on mixed diglossini) are absent because the native forest has almost disappeared.

CORRECTION: I have just been to the airport to check my altimeter. It seems likely that I have overestimated all altitudes recorded so far during this trip (i.e. July 17 and 18) by 300-500 ft. I have now corrected the altimeter — but not the records in my notes of today and yesterday.

July 19, 1965
Boquerón de Palmitas

Arrive area 7750 ft 5:35 a.m. Just getting light. Area with miscellaneous scrub. Some bird noises. Largely Andean Sparrows.

Clear, fairly cool, and windy.

Lots of hummingbird sounds 5:43.

5:44. Hear diglossine twitter. Many phrases one right after the other. No obvious Intro Notes. Bird singing in small trees along road. 15-25 ft up. Young from tree to tree. Impossible to identify species (yet). No other diglossine or Whitestart audible at the time. No Albi-type R's. Bird seems to have very large territory. Cy?

Diglossa shuts up 5:50. Then Atlapetes Whistle songs begin. Lots of "complete" phrases. Presumably rufinucha. Also some R's which may be Albi and/or Tarsis. These songs

do not overlap *Atlapetes* phrases.

13 5:55 a.m. Catch glimpse pair BYB's 4-6 ft up in thick second growth scrub edge forest along ravine. Apparently alone. *Atlapetes* silent now. But many other birds noisy. Definitely sounds like breeding season here.

14 6:00 a.m. Diglossa singing again same area as before. Now Twitterers are preceded by "Trit trit" Intro Notes. Must be Cy.

15 Then a couple of R's are inserted between presumed Cy phrases. Possibly Albi. No overlaps. Then both birds shut up.

Then hear a few phrases which sound like Yellow-faced Whitestart. No diglossine audible at the time.

14 Then see single Yellow-faced Whitestart feeding and singing 3-4 ft up in bushes along edge of ravine. Definitely alone. This area well within territory of presumed Cy; but the latter is neither audible nor visible now. 6:10 a.m.

15 Then see single Ruddy Flycatcher alone 4 ft up bare tree edge scrub. This certainly is one of the species which is uttering R's around here!

Whitestart shuts up. *Atlapetes* utters more whistle songs. Then *Atlapetes* and Whitestart alternate song phrases. Whitestart definitely Yellow-faced. 2 ft up in scrub edge road. Alternation is not "regular". One bird may utter several phrases between single phrases of the other. But there is absolutely no overlap. *Atlapetes* definitely is *rufinucha*.

16 Perched motionless 6 ft up in scrub opposite side of road from Whitestart. 6:18. Now Whitestart has shut up. *Atlapetes* continues for a while.

17 Then *rufinucha* starts to move around. 2-4 ft up in scrub. Feeding on seeds of *Compositae*. Continues to utter Whistle songs from time to time. Then single Cy (definite) suddenly appears. Apparently a

Cy case of Cy j → rufinucha. Cy perches 3 ft from rufinucha. Wa-
tches latter intently. But remains quite silent. Distant Whitestart (Cy
floor-face) intersperses one song phrase between rufinucha songs. No over-
lap. Cy still silent. Then Cy starts to move around and feed. Puck-
ing insects off leaves. 3 - 15 ft up. Then some Tangara-types j →
group. Land in trees 20 ft up. One of these Tangaras appears to be
juv heinei. Then Tangara types move on rufinucha remains be-
hind. Still uttering Whistle songs. Cy also remains. Feeds on purplish
berries. Plucking and chewing them.

Then everything silent 6:30 a.m.

Then rufinucha starts Whistle songs again. Cy seems to have
moved on.

6:36. Yellow-faced Whitestart alternates a few more phrases with
rufinucha. Both species certainly breeding here now.

Then both shut up. See ♂ Tiavis uttering R's 4 ft up in tree.
Yellow-face utters another phrase. Partial overlap with Tiavis! Then
rufinucha utters some more phrases. Both Yellow-face and Tiavis
continue to utter phrases from time to time. Tiavis partially or comp-
letely overlaps both Yellow-face and rufinucha, but the latter still
do not overlap one another.

Song behavior Tiavis here apparently different from that of
Tiavis at Boqueron de Tollo in Western Cordillera!!!

Then Tiavis and Yellowface shut up.

6:43. A few feet further along road. Catch glimpse mixed
flock in trees in distance. Can't identify most of the birds. But one
certainly is a Cy. Probably same individual seen with rufinucha earlier.
This certainly is one of the areas where Cys seem to be almost obli-

gate commensals !!!

Back to fruit site. rufinucha and Yellowface still uttering occasional song phrases. Non-overlapping. 6:50.

Then see single Yellow-throated Atlapetes (gutturialis) apparently alone. Silent. 3 ft up dense second growth scrub.

7:03. Further down road. See single sooty Thrush alone.

Then hear more rufinucha Whistle Songs in another area. Certainly not same individual heard and seen singing earlier.

7:07. Catch brief glimpse 3 Cys moving about, close together, 10 ft up, sparse scrubby trees edge pasture. All apparently adult; but no obvious overt hostility!

Everything quiet 7:30 a.m.

7:35. See mixed flock in scrub and second growth trees along road. When first seen, flock includes 2 cyanocephala, at least 2 Cys, others. All close together. 12 ft up in tree top. Also 1 brown squirrel. (Apparently usual species) Fairly noisy. Lots of "CN"s and "PN"s. Then group flies off. Can't see who leads. Cys f. → group repeatedly. Squirrel left behind.

After a minute or so, Cys stop following. Turn around and go back the way they came.

Then 1 Cys f. → 1 BCBT in scrub 3 ft up!

Cys certainly active nuclear here!

25 Then I see a single Yellowbelly feeding in scrub 60-75 ft away! Silent. Apparently alone. Eating same species purple berries as Cys earlier this morning.

8:10 a.m. Go further along road to another area. 7850 ft. Rather open second growth scrub.

Then a couple of Yellow faced Whitestart songs in distance.

217 Then see pair of Cyanocapla feeding in tree, 20 ft up, also in low scrub, 2 ft up. Alone uttering "PN"s

49 8:35 a.m. Different area 9850 ft. Scrub & trees along ravine. (One of the areas where I saw large mixed flocks in 1962). See a small mixed flock. Approximately 6 individuals. Includes at least 1 Blue & Black, 1 dull Tangara (juv.?) species unknown (heinei?), 1 Cy, 1 Yellowface, others. Blue & Black f → Cy f → group. Yellowface f → group. All birds 6-12 ft up. Both Cy and Yellowface feed frequently while with group, but not simultaneously. No overlaps. Cy feeds Purple berries. Yellowface flycatches.

Group was first seen when it flew into tree where there were 2 squirrels already. The two squirrels obviously pair. Both very small (Microscurus?). Generally warm brown, medium dark (but not at all rufous). With brilliant white bellies. Probably same species seen earlier this morning. But certainly not same species seen in other areas such as the Sierra de Merida. Squirrels absolutely ignore birds. Birds quickly fly off. Squirrels make no attempt to follow.

Presumably, if associations between squirrels and birds are not purely "coincidental", they are formed by the birds joining the squirrels rather than vice versa. (This seems obvious, in view of the association of the 2 types of animals.)

49 All the Cy songs with flock composed of "Tut tut" Intro Notes followed by long rapid, "formless", Twitter.

Leaving 8:50 a.m.

NOTE: There have been "white-leaved" Cecropias just below all 3 areas (Piedras Blancas, Santa Elena, and Boqueron de

Palmitas) where I have worked here (so far). This is another indication that the region is relatively very humid.

July 20, 1965
"La Montana" Surca of H. A.
Ca. de la Garcia

Arrive 5:35 a.m. 17900 ft Edge forest and scrub extending down slope. Clear & cool. Little wind.

Everything very quiet 5:42 p.m. No songs. A fair amount of Scotty Thrush patterns around (Alarm patterns)

5:45. Hummingbird sounds begin. Sounds like same species as at Piedras Blancas

Everything very quiet again 5:48. It looks as if very few (or none) of the birds here are breeding!

Then hear what sounds like Colibri display (long flight) in distance. Only one or two performances

6:05. See single rufinucha 2 ft in edge patch second growth scrub. Silent and alone

Then begin to hear a few R's. Probably Albi or Tianis

Then see single rufinucha feeding in Oak in middle of scrub. 10-20 ft up. Quite silent. Apparently quite alone

Bird noises increasing a little now, 6:14. Hummingbirds and

wrens.

♂ Albi → rufinucha 20 ft up in Oak. Then flies away again. Both birds quite silent. rufinucha seems to be picking insects off leaves

6:47. Different area. Relatively large patch second growth wood. There is one rufuscha whistle song. Then a few more. Distant. Bird obviously not very strongly motivated. Nothing else audible at the time - except humming birds.

Everything except humming birds dead quiet 7:07 a.m.

7:12. Cat's glimpse Diglossa, with Tarus, edge scrub. Both birds silent. Unfortunately Diglossa seen only in silhouette. Probably Cy. 3-4 ft up in bushes.

7:35. Down by fence itself. Come across Scaus (identification quite certain - get good view of purple cheek patch and purple on stomach) In full "chuk" song.

If Scaus are common here, this would help to explain why Diglossas are rare.

Now I can hear several Scaus in neighborhood. Scaus apparently in breeding condition now.

Hardly I see some tubular red flowers with Diglossa-type holes in them. Quite small holes. Then I see a Cy in "ridge"-like scrub 20 ft away. Silent. Apparently alone. There are Scaus around the neighborhood at the time, but none very close to the Cy. Apparently Cy and Scaus ignore one another. Cy disappears almost immediately.

Cy back again a couple of times. Same place. Again no reaction with Scaus. Cy never stays long.

See single ♀ Tarus perched on branch only a couple of feet from Scaus uttering "chuk" song. Scaus doesn't seem to mind at all. I.E. the Scaus around here certainly don't attack all small species.

Then I hear what may be a couple of Cy songs in distance. Long g. Switters. Can't tell if they have Intro Notes or not. I think that the

these phrases were uttered when Scans were silent or, at least, comparatively quiet.

I have yet to hear any Albi songs here (altho the local Scans are uttering R's quite frequently). At least some of the Scans R's overlap Scan "Chuk" songs.

Albi 8:15. See single Scan fly thru area where Cy was seen earlier. No diglossini around at the time. A few minutes later, ♂ Albi appears, in exact same area. Feeds on tubular red flowers, in usual diglossini fashion (i.e. this is the species which made the holes seen earlier). Also on purple tubular flowers (Palicourea sp., Rubiaceae). Probably same species of purple flower which the Albis near Munich were favored. This Albi is silent throughout the whole period observed. Scans audible in distance while Albi is around, but none nearby. Certainly no sign of reaction between Albis and Scan. Albi ranges 2-12 ft above ground. These are the same elevations which the Cy favored when it was here earlier.

So the territories of the Cys and Albis here must be at least broadly overlapping. (Although I have no definite evidence, I am agree that the territory of the local Cys overlaps that of the local Albis completely.) And the territory of at least one of the local Scans must partially overlap those of both Cys and Albis.

(I was particularly interested to see the Albi feeding on the tubular red flowers, and making holes in their corollas. I have just realized that I have never - to my recollection - seen Cys (or Cows) make holes in corollas.)

My observations today certainly would suggest that there is no overt hostility between Scans, Cys, and Albis here. Nor, app

18m
19m
20m
apparently, is there any contact or any form of overlapping among the three species. The absence of contacts might be expected in a region as small as this one. But the region is so small that one might, perhaps, expect overt hostility between the species. Such hostility may be avoided (or may not be "necessary") for any one or all of several reasons. In the first place, the local Scans apparently do not feed on the same species of flowers as the local Diglossas (this, the situation here is very different from the gardens of Bogota). Secondly, both Cy and Albi seem to be relatively rare at this particular site (if not in all other parts of the general region).

18m
19m
20m
At various times this morning, there was a medium sized greenish hummingbird (slightly smaller than Scan) in same area where Cy and Albi were seen, and where Scan passed through. Repeatedly fed on the same purple flowers as ♂ Albi. I think that the Scan who flew through this area attacked this other hummingbird in passing. But certainly this other hummingbird was not visible or audible when the ♂ Albi appeared. (It probably was not near to the Cy when the latter was around either.)

I must return to this area again!

NOTE: It may be useful to add some comments on the various environments around here. They obviously fall into two groups: (1) Santa Elena and Boqueron de Palmitas, and (2) Piedras Blancas and the Finca "La Montaña".

This division is not geographic. Santa Elena and Piedras Blancas are east of Medellin (and not far apart from one another). Boqueron de Palmitas and La Montaña are west of Medellin.

(1) Santa Elena and Boqueron de Palmitas both have fairly

70

dense human populations, with scattered houses, fences, etc. Lots of different patches of pastures, gardens, second-growth scrub, and forest. Forest includes extensive areas of broad-leaved trees (presumably second-growth but probably native species) as well as unported conifers.

(2) The region around La Montaña is quite similar to Santa Elena and Boquerón de Palmitas, but has much less broad-leaved forest. Only occasional angiosperm trees scattered in scrub. Also lots of small plantations and "hedges" of unported conifers. All in all, probably considerably less varied an environment than either Santa Elena or Boquerón de Palmitas.

Piedras Blancas is rather like La Montaña but "even more so." Fewer fences and gardens and even more unported conifers.

I think that conifers must be very unsuitable for mixed flocks of Thruprops and anouates!

July 27, 1965
Finca "La Montaña"

Start work in area where Juan, Cy, and Albi were last week
5:40 a.m.

By 6:05, I have seen several single thrushes, and pairs, alone. They all sound like sooties.

NOTE: I spent all morning watching Diglossini and hummingbirds. Without seeing a trace of a mixed flock, or any finches, tanagers, or warblers. But I did see several thrushes again and again. All sooties. And all alone.

July 28, 1965
Region of Belmaria

Trying to get to Paramo around here. But without success. Trouble with car, roads, etc. Finally reach place called El Sherbal, 6:15 a.m. Part Belmaria. This is just a farm, with pastures and a few patches of scrub. 8350 ft. Weather clear and cold.

Some Yellow-faced Whitestarts singing when we arrive NOD WA. Shut up fairly soon.

6:35 See three single sooty thrushes alone. In low-lying scrub along path.

53 Then more Yellow-face songs. NOD WA. Then see ✓ Yellow-faces in tall, mature-looking trees, scattered above second growth scrub. 6-25 ft up. Ca. 8400 ft.

Then I realize that these Yellow-faces are outliers of a large and

from flock. Found the rest of the flock a few yards down road. Region of low but thick second growth scrub. With lots of bamboo and other vegetation, miscellaneous flowers (mostly red) and berry-like fruits. Not far from patch of mature, apparently untouched "upper sub-tropical" forest. All birds seen are in the scrub itself.

8 55 This part of the group included, at least one (possibly two -
56 by itself, so, not together) Brown (s), 1 Cy, 1 Plush-capped Finch, a var-
64 iety of hopping birds (including 1 individual which probably is Emif
era), 2 PL Atlapetes, and at least 2 pairs or family groups (4-6 individuals) of rufinucha (white spots on wings). Almost a "mixed Atlapetes" flock!!!! Also 1 Yellow-bill with flock!

Birds on both sides path. Sometimes far apart. Sometimes close together. But moving about in "all directions". Perhaps group as a whole going about in a circle. But the whole thing looks very disorganized! Can't tell who (if anyone) is leading.

Most birds ranging 1-6 ft up. rufinuchas ranging from ground to 6 ft up.

When group first seen, it was very, very noisy. Large Atlapetes sounds. Lots of "quoting Twitter". Also Whistle Songs. (When Atlapetes were most noisy, the Yellowfaces were silent.) I think that a lot of the noise must have been due to the fact that the flock as a whole was passing from the territory of one pair or family group of rufinuchas to that of another - thus provoking a territorial boundary dispute. Viz the Yellow-thighed Finches in Chiriqui. (It also is possible that there was more than one pair or family group of PL's associated with this flock - and that they were also disputing - but I can't be more about this.)

As far as I could tell, the PL's and myiarchas definitely were not associating particularly closely with one another - at least most of the time.

After some minutes, the Atlapetes spp. quieted down. Finally apparently shut up entirely, except for "PN"s and/or "CN"s. At which point, the Yellow-bellies uttered a few more song phrases! Then also shut up. Then I heard one Brown R-3a3a. But neither the Brown (s) nor the Cy sang at any time.

The Pink-capped Finch showed a definite tendency to stick to bamboo (Viz the birds of the same species seen elsewhere in Northern Andes.)

17:20 a.m. Same area. Most of the flock seems to have disappeared. But some of it seems to have remained behind. Two Yellowbellies and three B. nigrocapitata, and at least one Whitewings! There is some sort of dispute among the B. nigrocapitata. Aerial chase. Yellow-belly f ———— > nigrocapitata. All birds visible now 1-3 ft up. In both bamboo and other scrub.

Perhaps these birds are bringing up the "rear guard" ??? If so, perhaps one or both of the Atlapetes spp. are (or were) in lead ???

Then these birds disappear. Then see single Cy not far away. I.E. Cy here may not follow mixed flocks over long distances like the Cy at Munchique.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

17:45. Only a few feet down road. Now I see that all or most of the large mixed flock is still here or has come back. Some birds are in trees edge scrub. I.E. Yellow-bellies, Cy, and White-stripes. All 15-25 ft up. Not close together, 10-15 yds apart. Also in some

1718 trees now are one Red Woodpecker and at least one Brown Squirrel.
!!! Both woodpecker and squirrel ca. 20 ft up. In nearby scrub, are
82 at least three rufrinchas and two B. nigrocrustatus close together.
B. nigrocrustatus repeatedly f —————> rufrinchas. And rufrin-
chas repeatedly f —————> B. nigrocrustatus. rufrinchas ranging
from ground - 2 ft up. B. nigrocrustatus 1 - 3 ft up.

83 Also with group are a pair of Ocellularia, ranging all levels 1 -
20 ft up in both trees and scrub.

Group as a whole quiet now, except for Cy, which is still fuzg-
ing from time to time.

Going to move up hill along path, to another area 8:05 a.m.

84 Good heavens! Life does get complicated here. Only a few hundred
yards further on. 8500 ft. 8:10 a.m. Come across another mixed flo-
ck. A group of birds first seen in low thick scrub (including lots of
85 bamboo). At least 1 rufrincha and 2 Yellowfaces. Some Yellowbelli-
es in small trees 50 yards away. Yellowbellies f —————> group of
rufrincha and Yellowfaces.

This group gradually moves up hill. Quite coherent. All birds
close together. Very noisy. Yellowfaces sing. NODWA. Yellowbellies utter
a great variety of loud sounds.

As group gets closer, I see that there are at least four Yellow-
86 bellies in it. All adult. Obviously divided into two pairs. Some probably
hostile charging back and forth - but not as much as one might, perha-
ps have expected. (To my recollection, this is the largest group of Yello-
w-bellies I have ever seen.) All birds ranging 2 - 4 ft up.

92 Also, as group gets nearer to me, I see that there is a Red Woo-
dpecker with it. What it was doing in scrub, I don't know. But it

suddenly appears and then flies on ahead of group. Lands on ground, sloping barranca, uphill. Feeds on ground. Very flicker-like. Then I lose sight of it.

94 Rest of group continues to move uphill slowly thru scrub. In front of it, are 2 or 3 R. nigroviridatus, 2-3 ft up, in bushes. When group first seen, it was at least 20 yards away from the nigroviridatus. And the latter were very noisy (lots of R's and flower-bells). But the group gets closer and closer to the nigroviridatus as it moves uphill. Finally the Yellow-faces and Yellow-bellies fly into same clump of bushes as the nigroviridatus. Should this be considered joining ??? As soon as the group came within 5 or 10 feet of the nigroviridatus, the latter shut up. Apparently the nigroviridatus did not leave the clump of bushes. But their silence would suggest that they were trying to remain inconspicuous and thus "spud" the group on its way. See, however, below.

57 In any case, the Yellow-faces and Yellow-bellies continue on their way uphill. Not followed by nigroviridatus. The latter remain behind in the same clump of bushes they have been clinging to all the time. Also, the rufinucha seems to have disappeared by now.

Repeatedly, the Yellow-faces f —————> Yellow-bellies. And repeatedly Yellow-bellies f —————> Yellow-faces !!!

Yellow-belly - Yellow-face group still very coherent

As it moves uphill, it gradually approaches line of mature-looking forest. Then, suddenly, a third flock appears !!! Moving thru line of forest. At right angles to Yellow-face - Yellow-belly group.

WCC 77 This third group includes a lot of birds, but I can identify only a few of them. One or two WCC, at least one BCBT, and at least one Green

and White Hummingbird. All 15-25 ft up in trees.

As soon as this third flock appears, the Yellowfaces of the second flock turn around and go rapidly down hill again. This, in spite of the fact that there do not seem to be any (other) Yellowfaces with the third group. The Yellowfaces apparently are followed by some or all of the Yellowbellies.

On their way down hill, the Yellowfaces pass thru or over the clump of bushes in which the B. nigrorotatus have remained. This time, as soon as the Yellowfaces have passed, the nigrorotatus follow them (or them + the Yellowbellies) at least part of the way down hill!!!!

76 A few minutes later, same area, I see a single Y going uphill, thru scrub, apparently on its way to join the arboreal third flock.

This is as nice a case of an encounter between apparently distinct flocks as I have ever seen.

But there are complications! It is quite possible, for example, that the Red Woodpecker which apparently started out with the second flock eventually joined the third. Also, the area where the third flock appeared is between the areas of the first and second flocks, which themselves are not far apart.

In actual fact, there seems to be a nearly continuous mass of birds throughout this whole "series" of areas. I have not yet, this morning, come to any large "uninhabited gaps" such as separate flock ranges in most parts of the Andes. Thus, in view of the fact that some of the "groups" seen have been diffuse, one might suppose that they are purely "accidental" aggregations. But I think that detailed observation of the exact movements of particular individuals is sufficient to reveal that at least some of the groups are "organized" social entities.

(viz the Yellowface - Yellowbelly and Yellowface - negrocrinitatus associations described above). There are, at least, "nodes" in the "matrix".

COMMENT: Mixed flocks may be closer together here than anywhere else I have ever worked (with the possible exception of the low woods near the Finca below Manichique). This would suggest that the (comparative) rarity of mixed flocks nearer Medellin is due to the fact that most of the natural vegetation near there has been destroyed. Certainly, to my eyes, there is more natural-looking vegetation around here than anywhere else in the region.

This, in turn, would support my hypothesis that accessibility to "island hopping" largely determines the frequency with which mixed flocks occur in any given region. This part of the Central Cordillera may be particularly amenable, simply because it is itself divided into several "islands" and also is particularly close to two "islands" (Frontero and Paramillo) of the Western Cordillera.

Mixed flocks certainly seem to be more common, and larger, here than in Moscopa, at comparable altitudes (and probably humidity) in the southern part of the Central Cordillera, last May.

Same area, 9:20 a.m. From sounds, I can tell that the Yellowfaces, Yellowbellies, and B. negrocrinitatus are still around. But not very close together now.

Mixed flock disappeared a long time ago. It certainly appeared to be very coherent and making rapid progress in a definite direction.

Going back down road 9:30 a.m.

Ranch area where first flock seen 9:35. All birds have gone! Area quite silent and deserted! This is good evidence that the first flock really was a social group, not just an accidental association in a particu-

early "favorable" site

Getting cloudy now. Wind coming up. Getting cooler.
Between areas fruit and second groups. There are lots of Acorn
Woodpeckers in trees here. But not in mixed flocks.
Leaving 10:05

July 29, 1965
Region of Belmura

Going to work same place today as yesterday

6:00-6:10. Area where first flock seen yesterday. There certainly
are some birds around here now, but not at all close together, and
certainly not a flock.

58
61 See single Yellowbell along. 25 ft up in tree edge scrub.
The various Yellowfaces singing around here (at least 3 individuals)
obviously are alone. In trees.

6:25 a.m. Area second flock. Occasional Yellow-face songs and
Atlapetes Whistle songs. No overlap. Then silence. Then some Basileuterus
as R-Lowruch patterns. Then silence again.

It apparently is not the "height" of the breeding season here either.
Presumably birds here are in same stage as at Frontino.

63
64 6:30. See pair Yellowbellies moving thru scrub. 6-12 ft up. Quiet.
Probably alone. But there is at least 1 B. nigrocrinitatus moving
thru scrub, in same direction, 20-40 ft behind Yellowbellies. 3-6 ft
up. Moderately noisy.

100
101 Then, a little further on, see some Yellowbellies in bush 6 ft up.
And I can hear nigrocrinitatus sounds very close by. So this does seem to

be a flock after all.

6:50 a.m. Well past second flock area. 8350 ft. Single Yellow-billed
flour fly. Definitely alone.

Everything very quiet 7:00 a.m. Also getting dark. More than e-
ven, it looks like rain is coming.

7:30 a.m. Weather getting better. Slight trace of sunshine. Then
disfurther along road. Slightly above 8000 ft. Come across a very large
and diffuse mixed flock. In area low and not very dense, obviously
by relatively young second growth.

First part of flock seen is a group of at least 1 B. nigrocrinitatus
and 4 or 5 Synallaxis. All but 1 Synallaxis is species LXXXXV. The other
or Synallaxis is generally dull brown all over. It may be a different
species, or the young of LXXXXV. Synallaxis ranging from ground - 3
ft up. B. nigrocrinitatus ranging from a few inches above ground - 3
ft up. All birds close together. All moving. Some disputing among Sy-
nallaxis. Begins when one of the LXXXXV birds chases the dull bro-
wn individual.

Then a group of 2 Whitestrupes and 1 Cy → group
of Synallaxis and nigrocrinitatus. Whitestrupes repeatedly →
Cy. Whitestrupes - Cy group moves on fairly rapidly. Synallaxis dis-
appear from my view. But nigrocrinitatus apparently follows, repeated-
ly, the Cys and Whitestrupes.

Then Brown → Cy. (This may be the same Brown
seen earlier today, or another individual.) Cy immediately makes an ob-
vious, hostile attempt to supplant Brown. Dances at Brown. But the
Brown doesn't budge. So Cy stops about 1" short. Then both birds fly
off. A second later, I see a furious aerial chase. Apparently Cy chasing

g. Brown. Incidentally, Cy is appreciably larger than Brown. Then Brown disappears. Apparently leaves flock. But Cy remains behind. Sings phrase after phrase. "Triumph". All together with Intro Notes.

112 Then Cy gradually moves away thru scrub. I follow it. No
 113 we see that there are many other birds in neighborhood. The Whitestripes
 113 well at least B. nigrocrinitatus. Also at least 1 Yellow-belly, 2 Flycatchers LXXXXI. All birds hanging 2-4 ft up in scrub. I also hear both Yellow-face and Atlapetes Whistle songs in same general area, but can't see these birds. (Yellow-face and Atlapetes songs not overlapping)

Group as a whole quite noisy. Whitestripes and nigrocrinitatus uttering R's. But not the Flycatchers LXXXXI.

Birds milling about without showing much obvious sense of direction. But they all disappear at approximately the same time (while I am writing this account). Apparently going up hill.

114 NOTE: When I was watching the "original" Synallaxis - nigrocrinitatus group, a single Atlapetes torquatus appeared! Passed through the group, silently, and then disappeared. This probably should not be considered a case of joining. Incidentally, this Atlapetes probably is not the species heard uttering Whistle songs later. (Latter presumably R. and/or rufinucha.)

8:15 a.m. Same area. Hear what may be Dubonia near by. Can also hear Cy singing not too far away. NODWA. But the Cy songs do overlap those of the presumed Dubonia. Apparently at same level.

Starting downhill again 8:20 a.m. Sun shining brightly now. A few yards along road, catch up with what is at least part of same flock. Yellow-belly (us) apparently in lead, but probably only

(101)

part of the time. They occasionally fly back or to one side. I think that when this happens the Flycatchers LXXXXI are "left" in the lead.

Now, 8:30, Flycatchers LXXXXT are way out in front. Prog. remaining steadily in one direction. But it looks as if the other birds are no longer following the Flycatchers. (Incidentally, the Flycatchers also have begun to utter R's now.)

Further down hill, 8:50, see single booty Thrush alone.

8:55. Area where second flock seen yesterday. See apparently single le rufinucha, silent, apparently alone, 3 ft up edge scrub.

Leaving 9:18 a.m.

August 1, 1945
Parricé

Going to work this morning in the first place I worked a few months ago — i.e. the place where G, Allen, Kay, and CC all occurred together

Arrive 5:31 a.m. Still quite dark. Cold. Sky partly cloudy. Some fog in distance, coming up from Moscopán.

Everything very quiet. First bird sounds 5:47 a.m. Thrush alarm calls. But these calls continue for only a few minutes. I hear there is silence again.

6:00 a.m. A few miscellaneous bird sounds in distance. But things in general still remarkably quiet. Certainly most species cannot be breeding here now.

See a green hummingbird, presumably no. VIII, feeding on small red flowers. Incidentally, the dark red cup shaped flowers which were so common here a few months ago seem to be rare or absent now.

6:06 a.m. Hear one Poicilothera "song" in distance.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

6:27. Hear Dubonia in distance.

Then see single Scrubbelly alone, 20 ft up in tree above locupense scrub. Uttering soft "CN"s. Flies off immediately.

6:50 a.m. A large mixed flock suddenly appears including at least 2 Pseudospingus, 2 Pytharopus eximius, 3 Yellowfaced, 2 Whitefaced Flycatchers, 2 Scrubbellies, 1 Yellowbelly, 1 Dubonia, 1 Setti, others. Flock moving very rapidly in one direction. Very coherent. All birds cited above ranging thru trees and taller bu

See on scrub 10-30 ft up. Pseudospingus and Butoraspis eximia alternating in lead. Yellowfaces, Yellowbells, Treebells, and Dubuna all follow repeatedly. Treebells definitely \rightarrow eximia. Group as a whole noisy. Yellowfaces fighting among themselves! Also Whitebeards fighting among themselves!

There does seem to be a lot of intra-specific hostility in the mixed flocks of this region.

There may also be a single Blue & Orange with this group.

Setts

Dubuna and Setts seem to form the "rear guard" - at least part of the time. But they are not particularly close to one another.

As far as I can tell, there are no particularly close associations of any sort - no special interspecific preferences - within this group. All birds ranging 3-25 ft apart.

After 16

As flock moves by, fairly high in trees, a single adult Atter appears briefly in bush below the other birds. Silent. Only visible for a moment. I don't know if it follows the other birds or not.

17:05. Same flock back. Retracing its steps. Still coherent. Still moving rapidly. Still noisy. Lots of Pseudospingus chatter. Lots of Dubuna song. Lots of Yellowface SHN's.

Setts

20

Now I see that there are at least 3 Pseudospingus with group, 2 Setts, at least 2 Blue & Orange Tanagers, and 1 PL Atlapetes. Also 2 Red Woodpeckers!

Setts

Pseudospingus and/or eximias still in lead all or most of the time. But now the rear guard seems to be composed of Yellowfaces, Blue & Oranges, and the PL as well as the Dubuna and the Setts is. The PL and Blue & Oranges also are following \rightarrow the group.

p repeatedly

Most of the birds still are ranging in trees and tall bushes. Now 6-20 ft up. But both the PR and the Blue + Oranges average lower than all or most of the others. Usually 3-12 ft up.

22

A single Sooty Thrush j → group. Then another! And then a third!!! One Sooty Thrush supplants → Pseudospin pus! All the Sooty Thrushes f → group repeatedly!!! Then there is a fight, with lots of aerial chasing, between two of the Sooty Thrushes.

2

After flock moves on, a single PR Atlapetes appears low in scrub, 3 ft up, in scrub about 40-50 yards behind the other birds. It is visible for only a minute or so. I don't think it followed the other birds. Even if it was "attracted" to the other birds, it certainly was not trying to associate with them very closely.

It would appear that the mixed flocks here now are similar to those seen here a couple of months ago — but even larger and more varied!!!

Sun coming out 7:20 a.m.

3

8:35 a.m. See single Firebelly. Silent and alone. 3 ft up in sparse scrub. Flies off immediately.

Then see a single Sooty Thrush alone in pasture

8:55. Down by road. See another single Sooty Thrush alone 10-20 ft up in tree

4

Then see single White-bearded Flycatcher. White-beard j → Andean Sparrow (sic!) in scrub along side of the road. 3 ft up. Then White-beard moves on. Sparrow does not follow.

NOTE: I have seen remarkably few birds of any kind down

ing the latter half of this morning's observations. This would suggest that they are even more "concentrated" than they were a couple of months ago. I.E. a relatively larger number of birds are in flocks.

9:05 a.m. See single Forbely alone. 6 ft up in hedge-like scrub. Sooty Thrush \rightarrow Forbely! But I think that the thrush actually is attracted to me. Utters Alarm Calls. Then thrush flies off. Forbely does not follow.

9:15. See another single Sooty Thrush alone. Perched exposed, 8 ft up, in "hedge".

Leaving 9:25 a.m.

August 2, 1965
Purace'

Arrive area where Laps and (probably) Cys were the only non-commensal Diglossini seen and heard a few months ago 5:37 a.m. Cloudy. Still dark. Some wind. Everything silent.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI.

Things generally very quiet ca 6:00 - 6:10 a.m. Obviously, most species are not in breeding condition here now. But the Forbelys may be an exception!

6:35 a.m. A group of 3 Butorampus eximius appears. Moving rapidly thru scrub. Approximately 10 ft up. Moderately noisy "CN"s and/or "PN"s. But definitely alone!

A few minutes later, see a single Sooty Thrush alone. 3 ft up in scrub. Uttering usual alarm calls.

Everything very quiet (again) now. 6:50 a.m.

Sun trying to come out 6:55 a.m.

24 17:03 a.m. Down by road. See mixed flock. Includes 2 Blue & Orange Tanageres, 2 PR Atlapetes. Definitely nothing else. All birds in low thick scrub. Blue & Oranges hanging 6" to 3' ft up. PR's hanging from ground to 3' up. All birds quiet. Only a few CN's. PR's f ———→ Blue & Oranges at least twice.

32 17:28. Some distance further on. See another mixed flock. Includes at least 2 Blue & Oranges, 2 Black and Whites, 1 eximia, 1 White-bearded Flycatcher, 1 one of the little streaked flycatchers LXXXXI. All these birds in mature trees in "alpine scrub". All 15-30 ft up. Both flycatchers moving at first. Then whole flock quiet. Flycatcher LXXXXI supplants ———→ Whitebeard. Blue & Orange f ———→ eximia. Black and White j ———→ Blue & Orange. Flock as a whole quite diffuse. Can't see who is leading.

33 There also are at least two Hemispungus or Basileuterus types low in scrub, approximately 50 ft away. But I can't tell if they really are integral members of the flock or not.

36 I also can hear a Yellowface singing nearby NODWA.

10 17:32. Another area. See 2 Scrubellies 10 ft up scrub edge or road. Definitely alone. One individual supplants the other.

Sun has gone now. Wind coming up. Getting colder.

48 8:00 a.m. Same area. Catch glimpses large mixed flock. Probably largely same as large flock seen earlier. But now includes at least 1 Scrubbelly and 1 Plush-capped Finch. Yellowfaces and Basileuterus or Hemispungus types apparently still associated with group. Group as a whole quite coherent now. But quiet. And staying low in the alpine scrub. (This may be due to change in weather.) Probab

by Blue & Orange and/or Plum-capped in lead.

NOTE: The Blue & Orange and the Plum-capped often are remarkably difficult to distinguish in the field. Especially when observational conditions are poor. Is this another case of "social mimicry"?

Laf 49 At one time, a single *Laf* suddenly appears in scrub, approx. 20 ft from flock. Silent. Disappears almost immediately.

Altr 50 A few minutes later, a single *Altr* (definite) appears in another bush on the outskirts of flock. This is at least 100 yds from where the *Laf* was seen. *Altr* also silent. And certainly flies away after a few seconds. None of the other birds follows.

To my recollection, this is the highest I have seen *Altr* here. Altitude, according to my altimeter now is 3170 m, 10,190 ft.

Everything dead quiet 9:00 a.m. Going along path up hill.

Nothing! Dead out again now, but no signs of life.

Down by road, see a single Sooty Thrush alone. 2 ft up in scrub.

Leaving 9:35 a.m.

NOTE: Although today's observations certainly were not very exciting, they would tend to confirm the theory that most of the birds of this region are usually gathered in flocks now.

August 3, 1965
Region of Purace'

Going to work in area where *Altr* seen a couple of months ago. Arrive 5:30 a.m. Cloudy. Just getting light. Everything quiet.

A few miscellaneous bird sounds begin almost immediately. Thrush alarm calls and others. Apparently no songs.

5:56. Some Baileuterus and/or Hemipungus type R's and Nodules. Quite a lot of phrases in rapid succession. Uttered by at least 2 different individuals.

See single sooty Thrush alone. On ground.

Then quite a lot more bird sounds 6:00 a.m. Sounds almost as if flock were beginning to form - on both sides of road. Yes! See some sort of tanager or finch fly across road into scrub where Baileuterus and/or Hemipungus are vocalizing.

Lots of birds vocalizing all along both sides of road.

It certainly would appear that many of the birds here are breeding now. (See comments below.)

Hear first Yellowface song 6:08. NODWA

Catch glimpses birds all around in both trees and scrub, without being able to identify any of them. But it is obvious that the flock of one is really forming - has not "crystallized" yet.

1-3 Then see definite mixed group. At least 1 Sitta and a couple of

Cyanospicus or Chlorospicus 30 ft up in tree. And two Baileuterus or Hemipungus 20 ft up same tree. All moving same direction. Sitta f → group.

6:20. 75 yds away, across road. See 2 Big Bullfinches 20-30 ft up in trees. Other birds in near vicinity.

10 Then see group at least 2 Sittas, 2 Tree creepers. 15 ft up. Yellow-bellied → group. Also others.

Sun coming out 6:25 a.m.

Birds are really wonderfully noisy now!

Lots of individuals seem to be converging, slightly up hill from road. Presumably including all or most species cited above. Also at least

- 11 ✓ Pseudospingus, 30 ft up in tree - ~~tree~~ 6:30 a.m.
 13 One little "sub-group" of 3 Yellowbellies, 10 ft. Atlapetes 20 ft up in same tree.

Group as a whole still not completely coherent 6:36 a.m.
 Bird moves declining a little 6:37. Have some already gone uphill ???

- 16 ✓ See 1 or 2 Flycatchers LXXXXT, apparently more or less isolated, 10 ft up in scrub.

Then see "sub-group" at least 4 or 8 birds quite close together in distant trees. Most are unidentifiable. But at least one is certainly Cy. Fly \rightarrow group. Ah! At least one of the other birds in this sub-group is Yellowface UUUU

- 24 ✓ Then, 6:50, see single Firebelly fly into tall tree. Perhaps 40 ft up. (I think this is first time I have seen Firebelly in this area.) At least one other small bird (unidentified, but warbler-like) \rightarrow Firebelly. Then Firebelly flies away. The other bird does not follow.
 25 Everything relatively quiet 6:55 a.m.

35 COMMENT: I know that the preceding notes and descriptions are very poor. Certainly, I have seen only a small fraction of the birds moving around here this morning. And I am not really sure what has happened. Certainly there have been a great many individuals of a great many species moving around within an area of (no more than) 100 (or 150) yds x 100 (or 150) yds. And certainly many more or less small mixed flocks have been formed from time to time. But in any of these seem to have been rather "evanescent". I am not sure that any very large, coherent, flock has been formed. If it has been formed, it has been close uphill, away from the road. Partly out of

my sight.

7.05. Birds are somewhat noisier (again) now.

8.11.11

See a single Lette flying from tree top to tree top up hill. There certainly are at least two other small birds (unidentified) in at least one of the trees.

The weather is beautiful now! Clear. Warm. No wind!

7.12. See a single B. nigrocrinitatus in scrub. By road 2 ft up. Picking insects off leaves. Apparently alone.

Everything dead quiet now 7:15 a.m.

All the large "blue & yellow mountain" type tanagers seem to have disappeared. So they probably have gone off as a flock.

HO II

44

46

Speak of the devil! Go down road a few hundred yards and come across definite mixed flock. In trees and scrub 10-30 ft up. Group quite coherent. I see only part of it, but it certainly includes at least 3 Yellowbellies, 2 Whitestripes, several tree creepers, and a pair of woodpeckers LXXXXVI. Whitestripes ranging 6-10 ft up. Yellowbellies ranging 6-15 ft. Woodpeckers and tree creepers 8-20 ft up. Woodpeckers noisy. Yellowbellies definitely bringing up rear of group.

A little further on, see apparently single B. nigrocrinitatus 5 ft up in bamboo scrub. Apparently alone. This bird moves off.

A minute later, single Yellowbelly, alone, lands in adjacent tree, 10 ft up. Flies on immediately.

8:45 a.m. See another single Sooty Thrush alone 20 ft up in tree. Uttering usual alarm notes.

Going back up road. Area seems almost empty now.

HO III 51

Can hear Yellowface singing not too far away. NODWA. Alas. Single fly flies across road. A pair of Yellowfaces f —

→ Cy! (Quite clear.) All birds land in scrub 6 ft up
8:23. Approximately 8-9 tanager-like birds fly down hill, high over road. Probably at least 2 species. But not very close together.

Clouds coming up, 8:35 a.m.

More birds flying downhill high over head!

There is some recrudescence of bird noises as clouds spread

8:42. See a couple of dull gray birds which look remarkably like Cal birds (but lack rufous undertail coverts). 6-20 ft up in scrub. Flycatching. Presumably a tyrannid, related to Outarea. Seen alone.

Then see single Yellowbelly fly by alone.

Sun coming out again 8:55 a.m.

Still more birds flying downhill, high over head.

7:10 a.m. Come across a small and rather diffuse mixed flock. Reg. con. rather scattered up in trees over bamboo scrub. Group includes at least 4 Blue & Black, 1 Yellowbelly, 1 Yellowface. All in trees 10-25 ft up. 4 Redwing. Blue & Black j → group. I also can hear both B. nigrocapitata and Whitethrope (s) low in scrub under trees. Both noises. And there is a Cy singing nearby somewhere! NODWA.

9:31. Another area. See a pair of Yellowbellies 10 ft up second growth with scrub. Apparently alone.

Also see another single Sooty Thrush alone.

Leaving 10:05 a.m.

NOTE: According to my altimeters now, the altitude here is 8900 ft, 2695 m.

COMMENTS:

My observations this morning would suggest that the local birds are showing much the same kind of social behavior now that

to they did a couple of months ago. But these observations certainly are not conclusive!!!

It is supposed to be full "verano" now in Papayan itself, and also on the near side of Paracé (altho we have had a couple of brief showers - including hail - in the city since my arrival). But it is supposed to be the raining season on the far (Tijeras - Moscopán) side of Paracé now (altho it certainly was very good weather in there today). This may explain why the birds on the near side of Paracé do not seem to be breeding now, while those on the far side do seem to be doing so.

This afternoon, going to work at level of Papayan itself. By small stream where I made first observations a couple of months ago. Arrive 3:35 p.m. Cloudy. Hot. Everything very quiet.

See group of 2 BT's and 1 (ruficapilla and/or cayana). Close together in tree, 10 ft up. But then the 2 species move in opposite directions.

Some flocks of Elaenia-like Flycatchers.

Big flock of Cowbirds flies into trees along stream. Apparently alone. Silent. 4:00 p.m.

Catch glimpse 1 or 2 Slate-throated Whitestarts. 1 ft up in scrub. Silent and alone.

There are very few flowers around here - and apparently no hummingbirds (!) - now.

See 1 Parula Warbler (presumably pitayumi) alone, 6 ft up in dense scrub.

Some wrens singing from time to time, but everything else very quiet.

Leaving 4:30 p.m.

August 4, 1965
Region of Purace

Going to work at a Finca called "Canaan" just above the town of Purace itself. Not very far from where Ater-Scan reactions were observed a couple of months ago.

Arrive base of path leading up to house 5:35. Just starting to get light. Moderately clear. Fairly warm 27.25 m 89.75 ft

Hear some miscellaneous bird noises as I go up path to farm. But not many. Mostly Thrushes.

Reach farm 5:55 a.m. Just under 2800 m. There is a large garden in here. Full of the same species of orange tubular flowers, growing in clumps, which is so common around Bogota.

Lots of humming birds feeding on these flowers 5:56

Common All or most are Cinnamoms. I.E. this is where the Cinnamoms have come to! Quite noisy.

Black There is a Black Diglossa feeding same species of flower in far part of the garden. Silent. Apparently not molested by humming birds. Flies away. Then I hear R-Zaza. Bird is presumably Ater.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

NOTE: During the course of this morning's observations, I saw Sooty Thrushes alone a considerable number of times (at least 6 or 7) without bothering to record them in my written notes.

This species is partly a commensal of man. Although they are not rare in apparently untouched forests, Sooty Thrushes seem to be most common where there are more or less extensive open areas, such as pastures, in the immediate vicinity.

August 5, 1965
Purace'

Going to work same place today as yesterday. Arrive house at 5:30 a.m. Still dark. Occasional light sprinkles of rain on way up, but sky looks largely clear.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

August 6, 1965
Purace'

Going to work same place today. Arrive house 5:31 a.m. Moderately clear. Cool. Little wind (as yet).

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

August 14, 1965
Purace

Going to work eastern side mountain. Region of thick but not very high second growth (in semi-forest). 9150 ft. 2810 m. (Not far above a patch forest where largest flocks have been seen. Arrive 5:50 a.m. Partly cloudy. Little wind.

Everything quiet when we arrive. Then miscellaneous thrushes around 5:55. Dead quiet, 6:00 a.m.

It certainly doesn't sound as if anything is breeding here now. First Yellowface song 6:02 a.m. NODWA. Then several more. Still NODWA. Yellowfaces shut up. Then hear first Atlapetes Whistle Song. NODWA. Then more Yellowface. NODWA. Then more Atlapetes. NODWA 6:04. This continues for some minutes more, with absolutely no overlaps.

General silence 6:15 a.m. Then a few miscellaneous sounds far away. Then more Yellowface songs. NODWA.

The sound here seems almost deserted now. (Most of the audible Yellowfaces are some distance away.)

Then Atlapetes songs NODWA. Then more Yellowface NODWA. Then more Atlapetes. NODWA 6:32 a.m.

6:36 a.m. Single Yellow-belly flies by. Overhead. Definitely alone. Then another single Yellow-belly flies by alone.

Aha! This Yellow-belly lands 1 ft up in bush. When I get to this bush, I see that there also are 1 PR Atlapetes and 1 PR Atlapetes in it. PR flies off to neighboring bush. PL f —————> PR. Yellowbelly does not follow group.

PL's seem to have a definite tendency to follow other species of

Atlapetes (at least black & yellow ones) !!!

6:37. Down by road. See pair Yellowfaces alone. 25-40 ft up in trees in patch VSF. One individual sings repeatedly. NO DW. Alone.

7:05. Find side path going thru second growth scrub.

see single Big Butorampus. Silent. 15-25 ft up in isolated tree above scrub. Apparently alone. But I can hear other birds (Yellowface, probably Cy, and others) 50-100 yds away.

Then Big Butorampus flies into a large mature tree. And another Big Butorampus follows. When I manage to get a good look at the trees after a few minutes maneuvering in mud, I see that there is a single PL in it; but I can't find the Butorampus! PL flies off into distant tree. Nothing follows.

Then complications set in. A large mixed flock appears in a scrub right beside tree in which Butorampus and PL seen. This scrub obviously second growth, 10-18 ft high, but thick, with lots of bamboo. Flock includes at least 1 PL, 2 PR's, 2 Yellowbellies, 2 Blue & Oranges, 2 "Little Stupid" Glycatiters (LXXXXT). All birds ranging 4-15 ft up. This particular scrub group very coherent. All birds noisy. When first seen, Yellowbellies in lead. Glycatiters LXXXXT f → Yellowbellies. Glycatiters LXXXXT f → Yellowbellies. Blue & Oranges f → group repeatedly. Then group changes direction. And PL(s) take(s) lead. Glycatiters LXXXXT f → PL's. Glycatiters LXXXXT f → PL's. Blue & Oranges f → group. Yellowbellies f → group.

At one time, there also is a pair of formicivores or wren (dull brown, small) with group in scrub. Very noisy. But I don't think that they stay with group very long.

146 Group also is visited by a single White-throated Hummingbird. White-throat f —→ group repeatedly. Then flies off and disappears temporarily.

146 There is a pair of Ruddy Flycatchers in nearby small trees, 15-25 ft up. Also very noisy. Uttering lots of R's. Frequently only 5-10 ft from (other) members of flock, but it is difficult to determine if there are any special social reactions between the Ruddies and the others.

149 Then a single Coer (definite) f —→ group !!! Flies in to middle. Silent. Perches in tree 8 ft up. Then flies on. Apparently goes far away. Nothing follows. This Coer must presumably purely an escorting reaction.

Group eventually moves up into mature tree(s) where Big But braupis and PL seen a few minutes earlier.

As group passes, a pair of PR Atlapetes appears low in scrub, behind them, definitely bringing up rearward. 3-10 ft up. PR's f —→ group repeatedly. But then the PR's turn back, go in opposite direction. Nothing follows PR's. (One of the PR's pulls up long strand of grass. H.M.? Is this species breeding here now??) Following by PR's probably also purely escorting.

At no time, were there any indications of particularly close association between the PR's and PL(s) in this group.

When group goes up into trees, Ruddies and White-throat remain behind.

I think that the Big But braupis seen earlier must have been "outliers" or "forerunners" of this group. Also the Ay and Yellowface(s) heard earlier.

A few minutes later, essentially same group is back ca. 7:40 a.m.

Coming down out of fig trees into scrub again. Now see that group definitely does include 2 Yellow faces and 1 Cy. But the Yellowbellies seem to have left. And I can't see Big Buttercups now. Rather surprisingly the Striped Flycatchers ~~XXXXX~~ definitely are in lead now! Followed by Blue & Oranges. Blue & Oranges f ———→ ~~XXXXX~~ repeatedly. PL (s) f group repeatedly. Cy j ———→ Blue & Orange. Cy f ———→ group repeatedly. Yellow faces f ———→ group repeatedly.

Both Yellow faces and Cy sing repeatedly. No overlaps. All Cy songs rapid Twitters with "Tut" Intro Notes.

Group as a whole still very coherent. Moves thru scrub very rapidly. Soon lost to view.

But the Ruddies remain behind after the others leave.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

Flock back again ca 8:10!!! First appears a pair of B. nigrocrinitatus. Moving thru scrub. 5-10 ft up. Very noisy. Uttering lots of SHN's, Rattles and Flourishes. Then, a few minutes later, and at least 20 yds behind, appears a pair of Yellow faces. Following exactly same route as the nigrocrinitatus. Apparently definitely attracted to the latter (which are still audible in distance). Then appears a single PL. PL j ———→ Yellow faces. Then the rest of the group appears. Much as before. But now includes Yellowbellies again! Also 2 or more Blue & Blacks. Blue & Blacks tend to stay fairly high, 10-20 ft up. Blue & Blacks may tend to associate particularly closely with Yellowbellies. ~~UUUUUUUU~~

104 ~~UUUUUUUU~~ ~~UUUUUUUU~~ still includes Cy. And also Coer. Coer f ———→ group up at least twice. As far as I can tell, there is no particularly close association between Coer and Cy (but I certainly am not sure of this!).

Neither Cy nor Coer sings while with group. But the Yellow-faces do. Repeatedly. NODWA.

A single White-throat "visits" group again.

Then group disappears again, going back in the direction from which it came.

This group certainly is very long-lived! Presumably lasts all day (and probably re-formed day after day).

I wonder why there were no Conurostrum or Pseudospingus with this group. Is the vegetation here too low???

Going to continue along the side path. Leads on to region mixed second growth and tall mature forest.

8:58. See single Sooty Thrush alone. 12 ft up in tree above scrub. B. silent.

9:01. Region where most of scrub is bamboo. Come across another mixed flock. Includes at least 3 or 4 of the All-rufous Synallaxis, 2 "Spectacled" Atlapetes (LXXXXVII), 2 GT's, 1 Yellowbelly, 2 (or 4) B. nigrocrinitatus, 2 Yellowfaces, probably others. Yellowfaces in tree above scrub. 8-20 ft up. Yellowbelly in tree, 12 ft up. GT's ranging from scrub, 4 ft up, to trees 30-35 ft up. B. nigrocrinitatus in scrub. 4-12 ft up. Atlapetes and Synallaxis very low, ground level - 3 ft up. Synallaxis and nigrocrinitatus very noisy. Other birds fairly quiet. "CW"s. Synallaxis and Atlapetes very closely associated. Spectacled Atlapetes f → Synallaxis at least twice. Rest of group very diffuse. Birds often 50-100 yds apart from one another. Yellowfaces possibly leaders. B. nigrocrinitatus may not follow the other birds when the latter move on.

While group is around, I can also hear Cy singing high in near

by trees. But I can't see it. NODWA

9:31 a.m. Just a little further along path. Similar environment

While I am watching and listening to a Coer (SEE TODAY'S NOTES ON MIXED DIGLOSSINI) a small mixed flock shows up. Probably different from the one seen a few minutes earlier. Includes at least 4 Yellowfaces, 5-15 ft up in bamboo scrub & myrtle trees. Noisy. Fighting among themselves. At same time, I can hear *Prailaterus* and/or *Hemipus* singing - type R's and flower-like in sound. Also presumed by singing in nearby trees. Once, a single White throat comes and "visits" Yellowfaces.

Going back down path 10:05 a.m.

Leaving 10:25 a.m.

COMMENT: This morning was most encouraging. It would tend to confirm my preferred hypothesis about the Central Cordillera. I.E. in the mornings, and at relatively high altitudes, at least, mixed flocks are as common in the Central Cordillera as in the Western. (I may have been "overly" impressed by the frequency of mixed flocks near Munchique, simply because I made so many observations in the afternoon, at relatively low altitudes, there. It probably is true everywhere that mixed flocks are more common at relatively low elevations than at relatively high ones. Probably also true that they are more common in the afternoon, on the average, than in the morning.

There may be more species with "anomalous" specializations for alloregamonousness on Munchique than on Purace. I.E. the Slate-throats, Sooty Thrushes, and *Atlapetes torquatus* on Munchique. But the Coers on Purace may be an exactly comparable case.

The absence of a large amount, and great variety, of bird sounds at the first site visited this morning may not be a reliable in-

location that most of the local birds are not breeding. It may be simply that there were not many individual birds at the first site. Once I got onto the side path this morning, I got a very different impression of the probable status of the birds.

August 15, 1965
Paraná

Going to work along the same side path as yesterday. Arrive 5:37 a.m. Just starting to get light. Partly cloudy. Little wind.

Already a few bird sounds in "bog" area where car is parked.

Arrive area where first big mixed flock seen yesterday 5:46 a.m.

Most sounds here now are thrush. Then hear Basileuterus-type R's and Howlers in distance. Everything rather quiet 5:55. This cannot be height of breeding season for most of the local species!

First Yellowface songs 5:58. NODWA. Quite a lot of phrases in fairly rapid succession. There are at least 2 individual Yellowfaces singing. Phrases of the 2 individuals not overlapping. Both still NODWA 6:03 a.m.

6:05. See single ~~Sooty~~ Thrush alone. 23 ft up in tree above scrub.

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A single White-throated Hummingbird appears briefly. Alone.

No trace Atlapetes or Diglossa songs yet 6:12. Does this mean that the Atlapetes and Diglossas seen here yesterday were here only because they were "attracted" to the flock?

6:16. Go along path a few yards. Reach area "bog scrub." See single Yellow-belly 8 ft up in bush. There is at least 1 other bird in same bush, but I can't tell what it is. Yellow-belly quiet.

Yellow faces still singing NODWA.

14 Then see pair Blue & Oranges, 3-5 ft up, in bush 20 ft from where Yellowbellies were a few seconds ago. Silent. Alone. Fly off.

15 Hear first Atlapetes song in distance 6:21. NODWA. Then see one Yellowface NODWA. Then, 6:28 a.m., hear what may be some brief snatches of Laf song in distance. Interspersed among Yellowface songs. Definitely not overlapping.

Cloud cover continuous now. But no wind.

See a couple more single footy Thrushes alone. 10 ft up in trees.

6:38. Now hear several Yellowfaces singing, overlapping one another. Then shut up. Then hear 1 Atlapetes song. NODWA.

6:44. See definite mixed flock. Approximately same place Yellowbelly and Blue & Oranges seen earlier today. Group now includes at least two Yellowbellies, two Blue & Oranges, one Cy, one PL. Almost certainly others. Yellowbellies, Blue & Oranges, Cy hanging 4-8 ft up in scrub. Cy eating small white berries. PL on ground. Group as a whole noisy. Coherent. Yellowbellies in lead. All others follow.

There must be same birds seen in flock yesterday.

I am going further along path now.

6:58. Area of bamboo scrub and scattered tall trees. Where

65 - Spectacled Atlapetes flock seen yesterday. 9200 ft according to my altimeter now. When I arrive there are a couple of small brown corvids 30-40 ft up in trees. (This is the same species seen everywhere around here - including with first large mixed flock yesterday. Generally dull medium brown. Lighter, more buffy below. Bright buffy supercilious stripe.) One of the wrens singing madly. Long, faint, high pitched Twitters (These are the songs which fooled me on the west side of Purace a few

months ago I thought that they must be uttered by some sort of *Diglossina*. Wrens apparently alone.

About 100 yds away, something is uttered loud whistles, in indeterminate series. "Whoooo wheetsoo wheoooo wheetsoo,..." Can't see the bird uttering these sounds - but it is the sort of thing which the Spectacled Albatross might be expected to produce. (The whole performance is somewhat reminiscent of *A. torquatus*.)

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Then a large mixed flock appears. Probably includes approximately 15 birds. But I probably don't identify them all. I do see 2 Yellowfaces, 1 *Chrysomitris*, 4 (one!) Lutes, 2 Ruddy Flycatchers, 2 *Myiophobus* (species with orange patch throat, white breast), and at least 1 large tree-creeper. All these birds high in trees when first seen. 20-40 ft up. Yellowfaces definitely in lead. All others following. Group rather diffuse at first. Then very coherent.

Yellowfaces and some of the other birds fly into trees where Wrens are. Yellowfaces sing. Wrens also (continue to) sing. I think that the songs of the 2 species are partly overlapping. But it is difficult to be sure of this, as Yellowface sounds are much louder than those of the Wrens. In any case, the Wrens soon fly into another tree. And then I lose sight of them. I thought that they were leaving flock; but later, after flock has passed by, the Wrens do not reappear. I.E. they may have gone with the flock after all.

This series of reactions might be considered a case of flock joining → Wrens. But I rather imagine the fact that the flock goes into the "Wren tree" is largely "coincidental".

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As the flock moves from tree to tree, ✓ 1 or 2 *B. nigrocapitata* appear 4-6 ft up in bamboo scrub below trees. Very noisy. Lots of

SHN's, R's, and Howlers. I am almost certain that these nigrocristatus were in scrub long before the flock arrived - but quiet and hidden. I.E. they suddenly "emerge" only as a hostile reaction (perhaps an intention movement of escorting). In any case, these particular nigrocristatus certainly do not join and follow the flock. (These probably are the same birds seen "with" GT-Spectacled Atlapetes flock yesterday. They probably also behaved the same way yesterday.)

The fitties and Guemoscopus are picking insects off leaves. And they show a definite tendency to keep close together.

ADDITION: There also is at least 1 PL Atlapetes with this flock. Also high in trees (same levels other birds). Silent.

Eventually, the fitties come rather low. 4-10 ft up in tangles of main base tall tree. And then they begin to dispute among themselves. Probably 1 pair fighting with another. Very noisy.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

While fitties are disputing, I see that there is (are) 1 or 2 Basilentomus-types near them. Also fairly low. These certainly are not the "resident" nigrocristatus. Possibly other nigrocristatus. But I think more probably something like luteoviridis.

This group moves on down hill quite rapidly.

Light rain starts 17:15.

17:45 a.m. Another mixed flock appears same area. Probably includes some Atlapetes-types high in trees. But I can't identify these. Certainly includes a lot of birds in scrub. And I do identify some of the
 139 esp. 2 Plum-capped Finches, at least 1 Spectacled Atlapetes, at least
 166 3 All-rufous Synallaxis, 2 Little Striped Flycatchers, 2 Yellowfaces
 177 Certainly others. Atlapetes and Synallaxis ranging from ground to 2 ft up

Others ranging 2-8 ft up. Group very coherent. Going downhill. Following exactly same path as first group seen here earlier. But advancing on a very broad front. No regular leadership. Lynallars, Flycatchers, Plum-capped Finches, Yellowfaces probably all slightly ahead of the others at different times. Spectacled Atlapetes never seen to be ahead. Incidentally, today there is no sign of a particularly close association between the Lynallars and the Spectacled Atlapetes.

173 As this flock moves by, the "resident" B. nigrocapitata appear, again, same place as before. Again utter lots of SHN's, R's, and floorburrs. And again fall silent, go back down into scrub, after the flock has passed on.

The Plum-capped Juncos with this flock showed the usual tendency to stick to bamboo. Other species joined them both bamboo and "non-bamboo", showing no obvious preference for either.

This is as clear a case of two quite different flocks with overlap-
ping territories as I have ever seen.

Rain stops ca. 8:30. Going further along path 8:49 a.m.

8:55 am. Area similar environment. See group 3 Yellowfaced, 1 Yellowbelly, 1 Sooty Thrush ranging 30-40 ft up in trees. Selen t. Yellowbelly flies away. Other birds do not follow.

Then Hear Ruddy Gygis at 100 ft away.

Men Yellowface Lung NODWA

Then suddenly I am surrounded by birds! A large mixed flock! Includes at least the 3 Yellowfaces, 2 Yellowbellies (the bird that flew away seems to have come back), 2 GT's, 2 or 4 Attapetes, 2 Little Striped Flycatchers, 2 Ruddy Flycatchers, a variety of tree creepers (including large one with conspicuous white throat). Sooty Thrush seems

to have disappeared. All birds in this group more or less arboreal. Ranging 12-25 ft up in fairly small trees. Noisy. Coherent. Leadership changing. Yellowfaces, Yellowbellies, and GT's probably all in lead at different times. Different species feeding in their usual different ways.

This group progresses steadily down hill. GT's tend to lag behind as progress continues. Then, suddenly, the GT's fly back uphill and join what seems to be another, different, flock!!! This flock is only 100 yds or so "behind" first flock (and only about 100 yards from where original cluster of Yellowfaces - Yellowbellies - footy Thrushes were). But it does seem to be a more or less "distinct" group going uphill. And showing a preference for lower vegetation.

This new group includes, in addition to the GT's, 1 Yellowbelly, 2 Plain-capped Todies, at least 4 or 5 *H. atripileus*, at least 1 Pitta, 1 *Artamus torquatus* (sic!), 1 Little Striped Flycatcher, 1 Yellowface, 2 or 3 All Rufous Flycatchers. I also hear what sounds like White-striped (s) in neighborhood, but can't actually see the birds.

This group also very coherent. Most members ranging 2-15 ft up in scrub (lots of bamboo) and small second growth trees. Little staying relatively high, not seen below 10 ft up. *A. torquatus* seen only on ground and 1 ft up.

ADDITION: Group also includes at least two of the large white-throated woodcreepers.

The *atripileus* do a lot of fighting among themselves. Suppl. ants and long chases. Other members of group apparently peaceful.

Group as a whole noisy. Lots of "CN"s. And the *atripileus* disputes are accompanied by a variety of vocalizations. But none of the species does any singing.

Difficult to tell who, if anyone is in lead. Possibly the GT's at least part of the time.

all 210
all 213
When the first of these two groups was seen, I noticed a single Is
agon about 20 ft away. Large species. ♂? Green with red breast and
belly. White band between green of throat and red of breast. Lots of white
on tail. I couldn't tell whether it was really associating with the other
birds or not. But then, when the GT's joined from the first group
to the second, the trogon sort of drifted along behind them. And then
it definitely accompanied this group uphill. Sort of following a parallel
course, about 10 ft to one side of the other birds.

Could the trogon have been "attracted" to the GT's because they
also are green & red ???

There was a pair of B. ^Wmagnificatus low in scrub about
50 ft from first Yellow-face - Yellowbelly - Sooty Thrush cluster. When
the first mixed flock appeared around this cluster, the magnificatus
came up higher in scrub and uttered their usual range of vocaliza-
tions. Then subdivided. Then came up and vocalized again when the sec-
ond, uphill-moving, group appeared. Then subdivided again. As far as I
could tell, they showed no tendency to follow either group.

My God! Mixed flocks are thick here! They certainly seem
to be as common here as on Munchique! Possibly even more so. Almost
"continuous"!

Starting back down path 10:07 a.m.

Back to 9200 ft area. See single Sooty Thrush apparently alone
20 ft up in tree.

Also hear sounds which suggest that resident B. magnificatus
are still down in their usual scrub.

A little further on, hear Dull Brown Wrens (usual species) singing high in trees. Then Yellowfaces sing in adjacent tree. No overlap. See Yellowfaces 30 ft up. Apparently alone. Fly away.

Leaving 10:35 a.m.

COMMENT: There seems to be a greater variety of mixed flocks here than on Humblague. Not surprising, as there seems to be a greater diversity of environments here.

August 16, 1965
Purace'

Going to start work in the region of Tijeras this morning. The same place I worked a couple of months ago. Arrive 5:22 a.m. Still quite dark. Windy. Cool. Sky fairly clear. According to my altimeters now, the altitude here is 8400 ft, 2545 m.

Some thrush sounds 5:45 a.m. Then some other, miscellaneous, noises. Something that may be Yellowface song 5:47. NODWA. Again, definitely Yellowface. NODWA.

Unfortunately, some of the scrub here has been cleared since my last visit!

Everything quiet 5:52 a.m. Then some more Yellowface songs. NODWA 5:58 a.m. There also is something else singing here. Possibly slate-throat. Songs of this species occasionally overlap Yellowface songs, but not usually.

6:04. See apparently single Yellow-belly. 4 ft up in fairly tall scion Agave tree. Apparently alone. Fairly noisy.

Quite a number unidentified birds flying around now. Also a

into a lot of bird noise. 6:08 a.m. Both Yellowfaces and possible Slate-throats still singing quite frequently. Song overlaps are actually not uncommon, altho still relatively rare. Different individual Yellowfaces certainly are overlapping one another.

A single thrush, presumably sooty, flies by alone.

18 See single Yellowface singing 30 ft up in tall tree second growth "woods". NODWA. Apparently alone 6:23.

6:31. Yellowfaces still singing quite frequently. But other species have stopped. Yellowfaces NODWA.

19 20 A single Blue & Black moves thru low scrub edge pasture 2-3 ft up. Quiet. Alone. Then, 100 ft away, see single Yellowbelly, same level similar scrub. Also apparently alone.

Still beginning to reach this area 6:45 a.m. Going down road a little 6:50 Hear Dubusia singing up hill.

Going to walk along border USF and pasture. Ca. 8220 ft.

Come to region where there is thick but not too high second growth between USF and pasture. There does seem to be a mixed flock of some sort here, altho I can't see it well. Hear Yellowface(s) singing up hill. Also something which probably is Atlapetes sp. singing approximately 100 yds away. No overlaps. Then catch glimpses of a couple of olive birds, 8-15 ft up, in general area where Yellowface(s) are singing. Apparently joining or following Yellowface(s).

IV CORRECTION: A few yards further down path. Edge USF.

6:45. There are two of the same "Atlapetes" singing in trees about 100 ft apart. And now I see that they really are Slate-throats!!!! I had not realized before that Slate-throat songs really are quite reminiscent of the Whistle songs of Andean Atlapetes. Songs of Slate-throats here are

composed of 4 or 5 short whistle like notes. More or less descending in pitch (with possible exception end of last note). "chee chee chee chee"

Of course, this resemblance explains why

Yellowfaces (and replacement forms) do not usually sing when Atlapetes are singing!!!

(It does not explain why Atlapetes do not sing while Yellowfaces are singing. Perhaps they refrain because Yellowface songs sound like their own Greeting Swallows.)

A few minutes later, both Yellowfaces and Flatthroats are singing quite frequently. Again, no overlaps.

Then silence 6:50 a.m.

8:07 a.m. Some Whitestarts around here are uttering lots of long song phrases which sound like slowed-down versions of ordinary Yellowface songs, composed of much "harder" notes than usual Yellowface songs. Are these Flatthroats???

Incidentally, both Flatthroats and Yellowfaces here probably are in reproductive condition now.

8:30. 8100 ft. Hear more Dubuna song. Apparently in forest!

Back up to edge VSF + Pasture 8:40. Both Flatthroats and Yellowfaces still singing occasionally. Usual songs. Still no overlaps.

Getting hot now!

Back up by highway. See pair of Blue & Blackies, apparently alone 15-25 ft up trees very sparse scrub.

Back up to starting place, without seeing anything more!

9:26 a.m. 8400 ft. Can hear 1 or 2 Yellowbellies and 1 furnarii in same patch thick second growth. This must, I suppose, be considered another (sic!) mixed flock.

9:52. See 1 or 2 Yellowfaces 3-4 ft up in thick second growth edge pasture. Uttering "CN"s or "SHN"s. Apparently alone. But, at exactly the same time the Yellowfaces become conspicuous, a Cy begins to sing. Typical phrases NODWA. Thus Cy seems to be at least 100 yds from the Yellowfaces. Nevertheless, it is quite possible that its song were a response to the appearance of the latter.

10:06. See 1 Yellowface madly chasing another. Flying over scrub along road. Uttering SHN's. Obviously hostile. Alone

Leaving 10:10 a.m.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

COMMENT: It is obvious why mixed flocks are so rare here. Because both species and individuals are comparatively very rare here. This is, by far, the most depauperate

Probably I saw even fewer flocks here today than a couple of months ago because many of the birds (especially the Yellowfaces) are in reproductive condition now

Presumably this area is depauperate because of the very recent extensive destruction of natural vegetation. But there is one very surprising aspect of the area. Even the patches of natural vegetation which remain, apparently untouched by human hand, (and there are quite an appreciable number of such patches, some of which are quite large), appear to be almost as depauperate as the obviously "gutted" patches. This would suggest that some sort of "shock" effect has spread throughout the population of the whole area. Could this "shock" be the interruption of "normal" inter-specific social relations ???

August 17, 1965
Purace

Going to work at a comparatively low altitude on the west (dry) side of the mountain this morning. Where Ater-Scan interactions, and mixed flocks including A. rufinucha, were seen a few months ago. Arrive 5:15 a.m. Still dark. Cloudy. Little or no wind. Everything quiet.

Some bird sounds ca. 5:22. Possibly some type of OC. Then silence. Then a variety of miscellaneous bird sounds 5:41 a.m. Then silence again. Then more sounds. Possibly some hummingbird(s) — although apparently not Lolibri.

5:56. See single rufinucha feeding. Perched 6 ft up in small tree in sparse scrub. Apparently alone. Song very different from that of the Quito rufinucha !!! Stitches of rather slow, whistled, chatter or Twitter, interspersed with real R's !!! NODWA.

Bird moves thru scrub. Uttering similar sounds at irregular intervals. Then I hear some Atlapetes Whistle songs (without R) in distance. NODWA. Then Atlapetes shut up.

6:03 a.m. Hear a few Dubunia songs. Exactly same place as a couple of months ago. Dubunia shuts up. Then a few more Atlapetes chatters. Then more Atlapetes Whistle song in distance. Then more Dubunia song. No overlap Atlapetes and Dubunia.

Then see Dubunia. Perched 8 ft up. Exposed. In tree above the low scrub. Alone.

Will 6:03. See single rufinucha (probably not same individual seen before) Moving quietly thru second growth scrub. 2-8 ft up

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Then Dubunia flies into tree which Atlapetes has just vacated. This should be considered joining rufinucha group. Dubunia does not follow. Just perches 4 ft up. Then 2 CC's and 2 cyanocephala j → Dubunia! All on same tree. 4-8 ft up. No obvious reactions between the birds of different species. All quiet. Then single Audubon Sparrow j → group! Then 2 rufinuchas j → group! (One of these obviously is the bird that the Dubunia joined earlier. The other obviously is its mate.) Then single Yellow face j → group! All birds quiet. All perched close together in tree. No obvious hostility. Birds change perches from time to time. Sometimes a change by one induces other(s) to move. But these reactions obviously not supplants. Every once in a while, the Dubunia, the Yellowface, the CC's, and/or the rufinucha make a little excursion to one or the other of the nearby bushes. Apparently to feed. But always go back to original tree, within a few seconds, to behave as before. I have never seen an obviously highly integrated mixed flock so stationary.

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Then 1 CC leaves group. 6:09. Moves up hill thru hedge-like scrub. Silent. Ranging 6-10 ft up. The other birds do not follow — not even the other CC!

Then, 6:15, the group as a whole begins to move. Downhill (i.e. in opposite direction from the CC which left earlier). This movement is initiated by rufinucha. But then the leadership changes frequently and rapidly. Dubunia, CC, and Yellowface all in lead at different times.

Group still very coherent during movement. Birds often only a few inches from one another. Still quiet. Group disappears from my view almost immediately.

This flock certainly was formed instantaneously!!!

And it obviously is largely the same flock seen here a couple of months ago!!! In exactly the same locality!!!

(Note, again, that this flock was composed entirely of species also present in the Quito region.)

6:37. There are a number of small hummingbirds around here. Possibly the same S-H as at "Canaan".

6:47. Hear Yellowface singing in distance. NODWA

NOTE: All these observations are being made above the road. I have been walking slowly up hill. I am now at 9025 ft.

6:49. See single rufinucha, silent and definitely alone. 4 ft up in sparse hedge-like scrub. Almost certainly not one of the birds seen with flock earlier.

See a couple of sooty Hummers alone, in scrub-way down hill. Starting down hill myself 6:52 a.m.

COMMENT: I have always had an "unfortunate" suspicion that the absence of mixed flocks in such parts of the Quito region as the "No" locality might be due to the smallness of the bird populations there. But certainly the populations here are much smaller! And yet the birds are Allopreparous.

113 7:00 a.m. See pair of rufinuchas in thick hedge-like scrub. Above where mixed flock seen earlier. Ranging 5-15 ft up. Quiet. Then I see that there is a pair of CC's behind them. CC's f —————→ rufinucha repeatedly. CC's also quiet, ranging 5-15 ft up. Both CC's and rufinucha apparently picking insects off leaves.

114 Then I see single Atter in same hedge. 20 ft downhill from CC-rufinucha group. 10 ft up. Silent. Also picking insects off leaves. Shows absolutely no tendency to follow mixed flock.

I don't know if the birds in this C-rufinucha group are the same ones seen in the larger mixed flock seen earlier or not.

7:11. See single Sooty Thrush alone 3ft up in scrub and on ground. Rather quiet.

NOTE: Part of the scrub here has been cleared since my last visit

7:18 a.m. Downhill. Near road 8800 ft. See single C-rufinucha. Quiet and alone. Ranging from ground to 10ft up, in extensive "field" of miscellaneous second-growth scrub.

Another single Sooty Thrush alone in scrub by road.

Taking a long walk down road. (Note: There are quite a lot of Passiflora flowers around here at various localities. Apparently not same species as in the Western Cordillera. Salmon-pink, not lavender pink. There are also a lot of bushes with the clusters of small yellow flowers favored by VB's and others at "Canaan".)

7:40 Another single Sooty Thrush alone. And another. Hear some more Yellowface song. NODWA.

8:40. Slightly below road. Group of 3 Sooty Thrushes flies by. None but alone.

Sun coming out 8:50 a.m. Going back above road. Everything very quiet now.

More single Sooty Thrushes alone.

Nothing else! C-rufinuchas certainly are keeping themselves hidden now! (This presumably is why mixed flocks also have disappeared now as C-rufinuchas here may as important as passive nuclear species as they are on Mundique.)

Leaving 9:40 a.m.

COMMENT: It probably is significant that I did not see the

Diduna or the Cyanocypselus after the first flock disappeared this morning. This would suggest that the flock went relatively far away and kept together.

August 18, 1969
Papayon

Going to work near the city tomorrow. By the usual small steam. Arrive 5:35 a.m. Still completely dark. Heavy cloud.

Some miscellaneous bird sounds 5:50 a.m. Flycatcher song etc. Then everything quiet by 6:05 a.m.

See some squirrel (species unidentified) in tall tree. Silent and definitely alone.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

6:32. See single juv. ♂ Ramphocelus 15 ft up in tree. Alone. Then see a couple of squirrels in adjacent tree. Apparently the usual species frequently seen at higher altitudes. Bird and squirrels apparently not reacting to one another. This place certainly seems to have been invaded by squirrels now! Why?

6:40. Now there seem to be several juv. ♂ Ramphocelus around. But alone.

There also are flocks of Elanus around (as usual).

Leaving 7:40 a.m.

Central Cordillera Colombia
 Paramo - Mascapan Side
 May 1963

May 21, 22, 23,
 24.

No. Inds seen Alone

III III III III II

(22)

(25)

90.64%

No Inds in Flocks

III III III III III III III III III
 III III III III III III III III III
 III III III III III III III III III
 III III III III III III III III III
 III III III

(213)

No. Spgs per Flock

No Flocks seen

III III III III

No. H.O. Flocks seen

III III III I

Largest no. inds 1 Flock

14, 17, 17, 28, 26, 22

| | | | |
|----|----|-------|----|
| 30 | 8 | 4) | 11 |
| | 5 | 17 | |
| | 4 | <hr/> | |
| | 13 | 130 | |
| | 4 | | |
| | 2 | | |
| 26 | 2 | | |
| | 11 | | |
| | 3 | | |
| 10 | 16 | | |
| | 8 | | |
| | 4 | | |
| | 6 | | |
| 5 | 16 | | |
| | 4 | | |
| | 13 | | |

May 21 = 6 hrs 00 min

May 22 = 4 hrs 30 min

May 23 = 4 hours 15 min

May 24 = 5 hours 00 min.

TOTAL = 19 hrs 45 min

Central Cordillera Colombia

Purace - Town side + Top
May 1963

May 8, 9, 10, 11,
12, 14, 15, 16, 17,
18, 19, 20

No Inds seen Alone

Ind Ind Ind Ind Ind Ind Ind Ind Ind Ind
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226

46.95%

426

No Inds in Flocks

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Ind Ind Ind Ind Ind Ind Ind Ind Ind Ind

200

No Flocks seen

Ind Ind Ind Ind Ind Ind Ind Ind Ind Ind

34

No H.O. Flocks seen

Ind Ind Ind Ind Ind Ind Ind Ind Ind Ind

21

Largest no. Inds in Flock

9, 16, 18

No. spp. per Flock

| | | | |
|----|---|---|-----|
| 6 | 2 | 5 | 9 |
| 4 | 5 | 4 | |
| 3 | 4 | | |
| 2 | 4 | | |
| 5 | 4 | | 134 |
| 2 | 2 | | |
| 10 | 2 | | 31 |
| 3 | 8 | | |
| 7 | 3 | | 22 |
| 3 | 2 | | |
| 7 | 2 | | 24 |
| 4 | 4 | | |
| 2 | 3 | | 30 |
| 9 | 2 | | |
| 3 | 2 | | 22 |
| 2 | 4 | | |

45

24

| | | |
|----------|--------------|---|
| May 8 = | 4 hrs 00 min | |
| May 9 = | 4 hrs 30 min | 1 |
| May 10 = | 4 hrs 30 min | |
| May 11 = | 4 hrs 00 min | |
| May 12 = | 4 hrs 15 min | 2 |
| May 14 = | 2 hrs 00 min | |
| May 15 = | 4 hrs 30 min | |
| May 16 = | 5 hrs 15 min | 3 |
| May 17 = | 4 hrs 45 min | |
| May 18 = | 4 hrs 15 min | |
| May 19 = | 4 hrs 00 min | |
| May 20 = | 3 hrs 45 min | |

TOTAL = 49 hrs 45 min.

Central Cordillera Colombia
 Purace - Moscopan Side - Aug. 1963
 Nest Tijeras

Aug. 3, 1963
 153

No. Inds Seen Alone

IIII IIII IIII IIII

16

11

(18)

No. Inds in Flocks

IIII IIII IIII IIII IIII IIII IIII IIII IIII IIII
 IIII IIII IIII IIII IIII IIII IIII IIII IIII IIII
 IIII IIII IIII IIII IIII IIII IIII IIII IIII IIII
 IIII IIII IIII IIII IIII IIII IIII IIII IIII IIII
 IIII IIII III

(213)

92.21%

(291)

No. Inds. per Flock

28

4

2

6

3

46

12

14

9

4

39

10

4

10

11

10

11

46

131

No. Flocks seen

IIII IIII IIIII

14

No. H.O. Flocks seen

IIII IIII IIIII

14

Largest no. Inds. in Flock

35

Aug. 3 = 4 hrs 00 min

Aug. 14 = 4 hrs 30 min

Aug. 15 = 4 hrs 30 min

13 hrs 00 min

Central Cordillera Colombia
Paraná - "Hearts" town side & top.
August 1965

Aug. 1, 2.

No Inds. Seen Alone

|||||

18

68

73.53%

No Inds. in Flocks

|||||

50

Inadequate but
probably real

No. Inds. per Flock

13

2

17

11

33

No Flocks Seen

|||||

No H.O. Flocks Seen

|||||

Largest no. Inds. in Flock

22

Aug 1. = 3 hrs 30 min

Aug 2. = 3 hrs 30 min

TOTAL = 17 hrs 00 min

Central Cordillera Colombia Aug. 1, 2, 14
Paraná - Town Side & Top
August 1905

No. Inds. Seen Alone

III

III III

28

71

69.23%

Probably Composite

No. Inds. in Flocks

1. 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 1.10
 1.11 1.12 1.13

63

No. Flechtstein

||||| / 1

④

No. eggs per flock

13

2

7

11

5

2

No. H. O. Rocks seen

11/1

①

Largest no. Inds 1 Flock

22,

Aug 1 = 3 hrs 30 min
Aug 2 = 3 hrs 30 min
Aug 17 = 3 hrs 45 min

TOTAL = 10 hrs 45 min

Central Cordillera Colombia
 Piedras Blancas, Santa Elena
 July 1965 Boqueron de Palmitas
 La Montaña, Belmaria

July 14, 15, 17, 20,
 24, 28, 29.

No. Inds. Seen Alone

|||||
 |||||
 |||||

(83)

(196)

58.16%

Very Heterogeneous

No Inds in Flocks

|||||
 |||||
 |||||

(114)

No. Flocks Seen

|||||

No Inds. per Flock

16
 3
 3
 3

23

No. H.O. Flocks Seen

|||||

2
 2
 2
 4
 2

21

Largest no. Inds 1 Flock

20,

10
 9
 3
 17
 5
 4
 10

21

145

July 17 = 4 hrs 15 min
July 18 = 3 hrs 00 min
July 19 = 3 hrs 00 min
July 20 = 2 hrs 45 min
July 27 = 3 hrs 30 min
July 28 = 3 hrs 45 min
July 29 = 3 hrs 15 min

TOTAL = 23 hrs 30 min

Santa Marta Colombia

August 12, 1947
Santa Marta Region

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

3:00pm. Arrive 4650 ft. Lower edge of VSTF. Mixed fog and sunlight.

Almost immediately see what seems to be some sort of a mixed flock. Includes 1 White-beard, 1 Slate-throated Whitestart, 1 small ^{V³} rufous flycatcher. (Can't tell if latter is the same species seen elsewhere in the Andes or not.) Also others. All visible inds. hanging 6-30 ft up in very mixed vegetation. Not going anywhere in particular. Rather diffuse. 10-35 ft apart. All very quiet.

A few minutes later, there suddenly are a lot of birds around. Presumably main part same flock.

Now I see that group also includes another "White beard" and another "Bright" Ruddy Flycatcher (same species first individual — CXXV).

Also 2 Whitestarts. Definitely not slate throats. No. CXXVII. Was I wrong in my earlier identification of slate throat? I think so.

Also 3 ^{V¹⁰} ⁵ ¹² ¹⁴ ¹⁵ ¹⁶ ¹⁷ ¹⁸ ¹⁹ ²⁰ ²¹ ²² ²³ ²⁴ ²⁵ ²⁶ ²⁷ ²⁸ ²⁹ ³⁰ ³¹ ³² ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹ ⁴⁰ ⁴¹ ⁴² ⁴³ ⁴⁴ ⁴⁵ ⁴⁶ ⁴⁷ ⁴⁸ ⁴⁹ ⁵⁰ ⁵¹ ⁵² ⁵³ ⁵⁴ ⁵⁵ ⁵⁶ ⁵⁷ ⁵⁸ ⁵⁹ ⁶⁰ ⁶¹ ⁶² ⁶³ ⁶⁴ ⁶⁵ ⁶⁶ ⁶⁷ ⁶⁸ ⁶⁹ ⁷⁰ ⁷¹ ⁷² ⁷³ ⁷⁴ ⁷⁵ ⁷⁶ ⁷⁷ ⁷⁸ ⁷⁹ ⁸⁰ ⁸¹ ⁸² ⁸³ ⁸⁴ ⁸⁵ ⁸⁶ ⁸⁷ ⁸⁸ ⁸⁹ ⁹⁰ ⁹¹ ⁹² ⁹³ ⁹⁴ ⁹⁵ ⁹⁶ ⁹⁷ ⁹⁸ ⁹⁹ ¹⁰⁰ ¹⁰¹ ¹⁰² ¹⁰³ ¹⁰⁴ ¹⁰⁵ ¹⁰⁶ ¹⁰⁷ ¹⁰⁸ ¹⁰⁹ ¹¹⁰ ¹¹¹ ¹¹² ¹¹³ ¹¹⁴ ¹¹⁵ ¹¹⁶ ¹¹⁷ ¹¹⁸ ¹¹⁹ ¹²⁰ ¹²¹ ¹²² ¹²³ ¹²⁴ ¹²⁵ ¹²⁶ ¹²⁷ ¹²⁸ ¹²⁹ ¹³⁰ ¹³¹ ¹³² ¹³³ ¹³⁴ ¹³⁵ ¹³⁶ ¹³⁷ ¹³⁸ ¹³⁹ ¹⁴⁰ ¹⁴¹ ¹⁴² ¹⁴³ ¹⁴⁴ ¹⁴⁵ ¹⁴⁶ ¹⁴⁷ ¹⁴⁸ ¹⁴⁹ ¹⁵⁰ ¹⁵¹ ¹⁵² ¹⁵³ ¹⁵⁴ ¹⁵⁵ ¹⁵⁶ ¹⁵⁷ ¹⁵⁸ ¹⁵⁹ ¹⁶⁰ ¹⁶¹ ¹⁶² ¹⁶³ ¹⁶⁴ ¹⁶⁵ ¹⁶⁶ ¹⁶⁷ ¹⁶⁸ ¹⁶⁹ ¹⁷⁰ ¹⁷¹ ¹⁷² ¹⁷³ ¹⁷⁴ ¹⁷⁵ ¹⁷⁶ ¹⁷⁷ ¹⁷⁸ ¹⁷⁹ ¹⁸⁰ ¹⁸¹ ¹⁸² ¹⁸³ ¹⁸⁴ ¹⁸⁵ ¹⁸⁶ ¹⁸⁷ ¹⁸⁸ ¹⁸⁹ ¹⁹⁰ ¹⁹¹ ¹⁹² ¹⁹³ ¹⁹⁴ ¹⁹⁵ ¹⁹⁶ ¹⁹⁷ ¹⁹⁸ ¹⁹⁹ ²⁰⁰ ²⁰¹ ²⁰² ²⁰³ ²⁰⁴ ²⁰⁵ ²⁰⁶ ²⁰⁷ ²⁰⁸ ²⁰⁹ ²¹⁰ ²¹¹ ²¹² ²¹³ ²¹⁴ ²¹⁵ ²¹⁶ ²¹⁷ ²¹⁸ ²¹⁹ ²²⁰ ²²¹ ²²² ²²³ ²²⁴ ²²⁵ ²²⁶ ²²⁷ ²²⁸ ²²⁹ ²³⁰ ²³¹ ²³² ²³³ ²³⁴ ²³⁵ ²³⁶ ²³⁷ ²³⁸ ²³⁹ ²⁴⁰ ²⁴¹ ²⁴² ²⁴³ ²⁴⁴ ²⁴⁵ ²⁴⁶ ²⁴⁷ ²⁴⁸ ²⁴⁹ ²⁵⁰ ²⁵¹ ²⁵² ²⁵³ ²⁵⁴ ²⁵⁵ ²⁵⁶ ²⁵⁷ ²⁵⁸ ²⁵⁹ ²⁶⁰ ²⁶¹ ²⁶² ²⁶³ ²⁶⁴ ²⁶⁵ ²⁶⁶ ²⁶⁷ ²⁶⁸ ²⁶⁹ ²⁷⁰ ²⁷¹ ²⁷² ²⁷³ ²⁷⁴ ²⁷⁵ ²⁷⁶ ²⁷⁷ ²⁷⁸ ²⁷⁹ ²⁸⁰ ²⁸¹ ²⁸² ²⁸³ ²⁸⁴ ²⁸⁵ ²⁸⁶ ²⁸⁷ ²⁸⁸ ²⁸⁹ ²⁹⁰ ²⁹¹ ²⁹² ²⁹³ ²⁹⁴ ²⁹⁵ ²⁹⁶ ²⁹⁷ ²⁹⁸ ²⁹⁹ ³⁰⁰ ³⁰¹ ³⁰² ³⁰³ ³⁰⁴ ³⁰⁵ ³⁰⁶ ³⁰⁷ ³⁰⁸ ³⁰⁹ ³¹⁰ ³¹¹ ³¹² ³¹³ ³¹⁴ ³¹⁵ ³¹⁶ ³¹⁷ ³¹⁸ ³¹⁹ ³²⁰ ³²¹ ³²² ³²³ ³²⁴ ³²⁵ ³²⁶ ³²⁷ ³²⁸ ³²⁹ ³³⁰ ³³¹ ³³² ³³³ ³³⁴ ³³⁵ ³³⁶ ³³⁷ ³³⁸ ³³⁹ ³⁴⁰ ³⁴¹ ³⁴² ³⁴³ ³⁴⁴ ³⁴⁵ ³⁴⁶ ³⁴⁷ ³⁴⁸ ³⁴⁹ ³⁵⁰ ³⁵¹ ³⁵² ³⁵³ ³⁵⁴ ³⁵⁵ ³⁵⁶ ³⁵⁷ ³⁵⁸ ³⁵⁹ ³⁶⁰ ³⁶¹ ³⁶² ³⁶³ ³⁶⁴ ³⁶⁵ ³⁶⁶ ³⁶⁷ ³⁶⁸ ³⁶⁹ ³⁷⁰ ³⁷¹ ³⁷² ³⁷³ ³⁷⁴ ³⁷⁵ ³⁷⁶ ³⁷⁷ ³⁷⁸ ³⁷⁹ ³⁸⁰ ³⁸¹ ³⁸² ³⁸³ ³⁸⁴ ³⁸⁵ ³⁸⁶ ³⁸⁷ ³⁸⁸ ³⁸⁹ ³⁹⁰ ³⁹¹ ³⁹² ³⁹³ ³⁹⁴ ³⁹⁵ ³⁹⁶ ³⁹⁷ ³⁹⁸ ³⁹⁹ ⁴⁰⁰ ⁴⁰¹ ⁴⁰² ⁴⁰³ ⁴⁰⁴ ⁴⁰⁵ ⁴⁰⁶ ⁴⁰⁷ ⁴⁰⁸ ⁴⁰⁹ ⁴¹⁰ ⁴¹¹ ⁴¹² ⁴¹³ ⁴¹⁴ ⁴¹⁵ ⁴¹⁶ ⁴¹⁷ ⁴¹⁸ ⁴¹⁹ ⁴²⁰ ⁴²¹ ⁴²² ⁴²³ ⁴²⁴ ⁴²⁵ ⁴²⁶ ⁴²⁷ ⁴²⁸ ⁴²⁹ ⁴³⁰ ⁴³¹ ⁴³² ⁴³³ ⁴³⁴ ⁴³⁵ ⁴³⁶ ⁴³⁷ ⁴³⁸ ⁴³⁹ ⁴⁴⁰ ⁴⁴¹ ⁴⁴² ⁴⁴³ ⁴⁴⁴ ⁴⁴⁵ ⁴⁴⁶ ⁴⁴⁷ ⁴⁴⁸ ⁴⁴⁹ ⁴⁵⁰ ⁴⁵¹ ⁴⁵² ⁴⁵³ ⁴⁵⁴ ⁴⁵⁵ ⁴⁵⁶ ⁴⁵⁷ ⁴⁵⁸ ⁴⁵⁹ ⁴⁶⁰ ⁴⁶¹ ⁴⁶² ⁴⁶³ ⁴⁶⁴ ⁴⁶⁵ ⁴⁶⁶ ⁴⁶⁷ ⁴⁶⁸ ⁴⁶⁹ ⁴⁷⁰ ⁴⁷¹ ⁴⁷² ⁴⁷³ ⁴⁷⁴ ⁴⁷⁵ ⁴⁷⁶ ⁴⁷⁷ ⁴⁷⁸ ⁴⁷⁹ ⁴⁸⁰ ⁴⁸¹ ⁴⁸² ⁴⁸³ ⁴⁸⁴ ⁴⁸⁵ ⁴⁸⁶ ⁴⁸⁷ ⁴⁸⁸ ⁴⁸⁹ ⁴⁹⁰ ⁴⁹¹ ⁴⁹² ⁴⁹³ ⁴⁹⁴ ⁴⁹⁵ ⁴⁹⁶ ⁴⁹⁷ ⁴⁹⁸ ⁴⁹⁹ ⁵⁰⁰ ⁵⁰¹ ⁵⁰² ⁵⁰³ ⁵⁰⁴ ⁵⁰⁵ ⁵⁰⁶ ⁵⁰⁷ ⁵⁰⁸ ⁵⁰⁹ ⁵¹⁰ ⁵¹¹ ⁵¹² ⁵¹³ ⁵¹⁴ ⁵¹⁵ ⁵¹⁶ ⁵¹⁷ ⁵¹⁸ ⁵¹⁹ ⁵²⁰ ⁵²¹ ⁵²² ⁵²³ ⁵²⁴ ⁵²⁵ ⁵²⁶ ⁵²⁷ ⁵²⁸ ⁵²⁹ ⁵³⁰ ⁵³¹ ⁵³² ⁵³³ ⁵³⁴ ⁵³⁵ ⁵³⁶ ⁵³⁷ ⁵³⁸ ⁵³⁹ ⁵⁴⁰ ⁵⁴¹ ⁵⁴² ⁵⁴³ ⁵⁴⁴ ⁵⁴⁵ ⁵⁴⁶ ⁵⁴⁷ ⁵⁴⁸ ⁵⁴⁹ ⁵⁵⁰ ⁵⁵¹ ⁵⁵² ⁵⁵³ ⁵⁵⁴ ⁵⁵⁵ ⁵⁵⁶ ⁵⁵⁷ ⁵⁵⁸ ⁵⁵⁹ ⁵⁶⁰ ⁵⁶¹ ⁵⁶² ⁵⁶³ ⁵⁶⁴ ⁵⁶⁵ ⁵⁶⁶ ⁵⁶⁷ ⁵⁶⁸ ⁵⁶⁹ ⁵⁷⁰ ⁵⁷¹ ⁵⁷² ⁵⁷³ ⁵⁷⁴ ⁵⁷⁵ ⁵⁷⁶ ⁵⁷⁷ ⁵⁷⁸ ⁵⁷⁹ ⁵⁸⁰ ⁵⁸¹ ⁵⁸² ⁵⁸³ ⁵⁸⁴ ⁵⁸⁵ ⁵⁸⁶ ⁵⁸⁷ ⁵⁸⁸ ⁵⁸⁹ ⁵⁹⁰ ⁵⁹¹ ⁵⁹² ⁵⁹³ ⁵⁹⁴ ⁵⁹⁵ ⁵⁹⁶ ⁵⁹⁷ ⁵⁹⁸ ⁵⁹⁹ ⁶⁰⁰ ⁶⁰¹ ⁶⁰² ⁶⁰³ ⁶⁰⁴ ⁶⁰⁵ ⁶⁰⁶ ⁶⁰⁷ ⁶⁰⁸ ⁶⁰⁹ ⁶¹⁰ ⁶¹¹ ⁶¹² ⁶¹³ ⁶¹⁴ ⁶¹⁵ ⁶¹⁶ ⁶¹⁷ ⁶¹⁸ ⁶¹⁹ ⁶²⁰ ⁶²¹ ⁶²² ⁶²³ ⁶²⁴ ⁶²⁵ ⁶²⁶ ⁶²⁷ ⁶²⁸ ⁶²⁹ ⁶³⁰ ⁶³¹ ⁶³² ⁶³³ ⁶³⁴ ⁶³⁵ ⁶³⁶ ⁶³⁷ ⁶³⁸ ⁶³⁹ ⁶⁴⁰ ⁶⁴¹ ⁶⁴² ⁶⁴³ ⁶⁴⁴ ⁶⁴⁵ ⁶⁴⁶ ⁶⁴⁷ ⁶⁴⁸ ⁶⁴⁹ ⁶⁵⁰ ⁶⁵¹ ⁶⁵² ⁶⁵³ ⁶⁵⁴ ⁶⁵⁵ ⁶⁵⁶ ⁶⁵⁷ ⁶⁵⁸ ⁶⁵⁹ ⁶⁶⁰ ⁶⁶¹ ⁶⁶² ⁶⁶³ ⁶⁶⁴ ⁶⁶⁵ ⁶⁶⁶ ⁶⁶⁷ ⁶⁶⁸ ⁶⁶⁹ ⁶⁷⁰ ⁶⁷¹ ⁶⁷² ⁶⁷³ ⁶⁷⁴ ⁶⁷⁵ ⁶⁷⁶ ⁶⁷⁷ ⁶⁷⁸ ⁶⁷⁹ ⁶⁸⁰ ⁶⁸¹ ⁶⁸² ⁶⁸³ ⁶⁸⁴ ⁶⁸⁵ ⁶⁸⁶ ⁶⁸⁷ ⁶⁸⁸ ⁶⁸⁹ ⁶⁹⁰ ⁶⁹¹ ⁶⁹² ⁶⁹³ ⁶⁹⁴ ⁶⁹⁵ ⁶⁹⁶ ⁶⁹⁷ ⁶⁹⁸ ⁶⁹⁹ ⁷⁰⁰ ⁷⁰¹ ⁷⁰² ⁷⁰³ ⁷⁰⁴ ⁷⁰⁵ ⁷⁰⁶ ⁷⁰⁷ ⁷⁰⁸ ⁷⁰⁹ ⁷¹⁰ ⁷¹¹ ⁷¹² ⁷¹³ ⁷¹⁴ ⁷¹⁵ ⁷¹⁶ ⁷¹⁷ ⁷¹⁸ ⁷¹⁹ ⁷²⁰ ⁷²¹ ⁷²² ⁷²³ ⁷²⁴ ⁷²⁵ ⁷²⁶ ⁷²⁷ ⁷²⁸ ⁷²⁹ ⁷³⁰ ⁷³¹ ⁷³² ⁷³³ ⁷³⁴ ⁷³⁵ ⁷³⁶ ⁷³⁷ ⁷³⁸ ⁷³⁹ ⁷⁴⁰ ⁷⁴¹ ⁷⁴² ⁷⁴³ ⁷⁴⁴ ⁷⁴⁵ ⁷⁴⁶ ⁷⁴⁷ ⁷⁴⁸ ⁷⁴⁹ ⁷⁵⁰ ⁷⁵¹ ⁷⁵² ⁷⁵³ ⁷⁵⁴ ⁷⁵⁵ ⁷⁵⁶ ⁷⁵⁷ ⁷⁵⁸ ⁷⁵⁹ ⁷⁶⁰ ⁷⁶¹ ⁷⁶² ⁷⁶³ ⁷⁶⁴ ⁷⁶⁵ ⁷⁶⁶ ⁷⁶⁷ ⁷⁶⁸ ⁷⁶⁹ ⁷⁷⁰ ⁷⁷¹ ⁷⁷² ⁷⁷³ ⁷⁷⁴ ⁷⁷⁵ ⁷⁷⁶ ⁷⁷⁷ ⁷⁷⁸ ⁷⁷⁹ ⁷⁸⁰ ⁷⁸¹ ⁷⁸² ⁷⁸³ ⁷⁸⁴ ⁷⁸⁵ ⁷⁸⁶ ⁷⁸⁷ ⁷⁸⁸ ⁷⁸⁹ ⁷⁹⁰ ⁷⁹¹ ⁷⁹² ⁷⁹³ ⁷⁹⁴ ⁷⁹⁵ ⁷⁹⁶ ⁷⁹⁷ ⁷⁹⁸ ⁷⁹⁹ ⁸⁰⁰ ⁸⁰¹ ⁸⁰² ⁸⁰³ ⁸⁰⁴ ⁸⁰⁵ ⁸⁰⁶ ⁸⁰⁷ ⁸⁰⁸ ⁸⁰⁹ ⁸¹⁰ ⁸¹¹ ⁸¹² ⁸¹³ ⁸¹⁴ ⁸¹⁵ ⁸¹⁶ ⁸¹⁷ ⁸¹⁸ ⁸¹⁹ ⁸²⁰ ⁸²¹ ⁸²² ⁸²³ ⁸²⁴ ⁸²⁵ ⁸²⁶ ⁸²⁷ ⁸²⁸ ⁸²⁹ ⁸³⁰ ⁸³¹ ⁸³² ⁸³³ ⁸³⁴ ⁸³⁵ ⁸³⁶ ⁸³⁷ ⁸³⁸ ⁸³⁹ ⁸⁴⁰ ⁸⁴¹ ⁸⁴² ⁸⁴³ ⁸⁴⁴ ⁸⁴⁵ ⁸⁴⁶ ⁸⁴⁷ ⁸⁴⁸ ⁸⁴⁹ ⁸⁵⁰ ⁸⁵¹ ⁸⁵² ⁸⁵³ ⁸⁵⁴ ⁸⁵⁵ ⁸⁵⁶ ⁸⁵⁷ ⁸⁵⁸ ⁸⁵⁹ ⁸⁶⁰ ⁸⁶¹ ⁸⁶² ⁸⁶³ ⁸⁶⁴ ⁸⁶⁵ ⁸⁶⁶ ⁸⁶⁷ ⁸⁶⁸ ⁸⁶⁹ ⁸⁷⁰ ⁸⁷¹ ⁸⁷² ⁸⁷³ ⁸⁷⁴ ⁸⁷⁵ ⁸⁷⁶ ⁸⁷⁷ ⁸⁷⁸ ⁸⁷⁹ ⁸⁸⁰ ⁸⁸¹ ⁸⁸² ⁸⁸³ ⁸⁸⁴ ⁸⁸⁵ ⁸⁸⁶ ⁸⁸⁷ ⁸⁸⁸ ⁸⁸⁹ ⁸⁹⁰ ⁸⁹¹ ⁸⁹² ⁸⁹³ ⁸⁹⁴ ⁸⁹⁵ ⁸⁹⁶ ⁸⁹⁷ ⁸⁹⁸ ⁸⁹⁹ ⁹⁰⁰ ⁹⁰¹ ⁹⁰² ⁹⁰³ ⁹⁰⁴ ⁹⁰⁵ ⁹⁰⁶ ⁹⁰⁷ ⁹⁰⁸ ⁹⁰⁹ ⁹¹⁰ ⁹¹¹ ⁹¹² ⁹¹³ ⁹¹⁴ ⁹¹⁵ ⁹¹⁶ ⁹¹⁷ ⁹¹⁸ ⁹¹⁹ ⁹²⁰ ⁹²¹ ⁹²² ⁹²³ ⁹²⁴ ⁹²⁵ ⁹²⁶ ⁹²⁷ ⁹²⁸ ⁹²⁹ ⁹³⁰ ⁹³¹ ⁹³² ⁹³³ ⁹³⁴ ⁹³⁵ ⁹³⁶ ⁹³⁷ ⁹³⁸ ⁹³⁹ ⁹⁴⁰ ⁹⁴¹ ⁹⁴² ⁹⁴³ ⁹⁴⁴ ⁹⁴⁵ ⁹⁴⁶ ⁹⁴⁷ ⁹⁴⁸ ⁹⁴⁹ ⁹⁵⁰ ⁹⁵¹ ⁹⁵² ⁹⁵³ ⁹⁵⁴ ⁹⁵⁵ ⁹⁵⁶ ⁹⁵⁷ ⁹⁵⁸ ⁹⁵⁹ ⁹⁶⁰ ⁹⁶¹ ⁹⁶² ⁹⁶³ ⁹⁶⁴ ⁹⁶⁵ ⁹⁶⁶ ⁹⁶⁷ ⁹⁶⁸ ⁹⁶⁹ ⁹⁷⁰ ⁹⁷¹ ⁹⁷² ⁹⁷³ ⁹⁷⁴ ⁹⁷⁵ ⁹⁷⁶ ⁹⁷⁷ ⁹⁷⁸ ⁹⁷⁹ ⁹⁸⁰ ⁹⁸¹ ⁹⁸² ⁹⁸³ ⁹⁸⁴ ⁹⁸⁵ ⁹⁸⁶ ⁹⁸⁷ ⁹⁸⁸ ⁹⁸⁹ ⁹⁹⁰ ⁹⁹¹ ⁹⁹² ⁹⁹³ ⁹⁹⁴ ⁹⁹⁵ ⁹⁹⁶ ⁹⁹⁷ ⁹⁹⁸ ⁹⁹⁹ ¹⁰⁰⁰

Now most of the birds are quite close together. The *Atlapetes*, *Basileuterus*, *Hemispingus*, *Zonotrichia* and *Albi*

stay quite low in edge scrub. 2 - 6 ft up. All the others range 6 - 25 ft up. Most are quiet. But *Atlapetes* utter a fair number of loud "sweeeeeee" notes. White beards utter usual noises of species.

Albi Whitestarts, White beards, Bright Ruddies, and ♂ *Albi* tend to stick quite close together. Obviously nuclear. But not really "leaders". Actually flock isn't going anywhere fast, and probably has no "need" of leader.

Albi Group gradually drifts away to right. Then drifts back, ca 3:50 pm. Apparently same birds. Still associated. (Including ♂ *Albi* !!!) Now one of the Chuck *Atlapetes* seems to be in lead. Followed very closely by Whitestart - Whitebeard - Bright Ruddy - *Albi* "nucleus". Birds a little more noisy now. And moving more rapidly and consistently. Soon disappear from sight.

♂ *Albi* seems to disappear at same time, presumably going along with the flock !!!

Catch up with same flock again only a few yards further on. Get better view of "Whitestripe or rufous type". It definitely is something different. EXXVIII

This flock certainly is long sustained and highly integrated!

5:00 pm. See what seems to be same flock in almost exact same area. Apparently all or most same birds attached!

NOTE: This flock seems to have "incorporated" all the suitable birds in the (not very large - 1/4 - 1/2 mile long) that I have been able to cover this afternoon. At least, I can't

any other birds around.

5:23 pm Same flock reappears again. This time White's starts definitely in lead. Check Atlapetes f ———→ Whitertant.
 ♂ Albi f ———→ Atlapetes. All the rest just f ———→
 Group still quiet. But most individuals close together.

NOTE: I will count this flock only once, for this afternoon, when making the formal tabulations. But I will use later observations to correct my identifications, and counts of birds, made during the first period of observation.

Thus, for instance, when the flock reappeared this last time, it was obvious that it included 3 Whitertant XXXVII's. Presumably all 3 have been present all the time.

NOTE: The ♂ Albi has been feeding on small tubular or orange flowers. In usual Diglossa style. There also is a small hummingbird (XX) here which feeds on same flowers quite frequently. Apparently using Diglossa holes!!! But I have never seen the 2 species around in the same area at the same time.

When the flock appeared again at 5:23 pm, the ♂ Albi fed at a whole series of these flowers. Then disappeared. A few seconds later, a single hummingbird XX appeared. XX f ———→ flock. Then the XX also fed on whole series of same species of flower as the ♂ Albi. Probably including some of the same individual flowers!!! But Albi never (re) appears.

Mutual inhibition and avoidance ????

COMMENT: Why aren't there any real "tree top" members of this flock (e.g. Cys, some tanagers) ????

Starting downhill 6:50 pm.

August 13, 1967
Santa Marta Region

SEE TODAY'S NOTES ON MIXED DIG-LOSSINI

6:25 a.m. Border of USTF with quite extensive patch of low dense scrub in front of it. Come across mixed flock. Possibly but certainly not wholly, flock seen yesterday. Includes at least 2 ^{W 19}Whitetails XXVII, 2 ^{W 20}White-bellies, 2 ^{W 23}Chick Attap ites — all low in scrub, 4-12 ft up — 2 ^{W 33}M. cyanocephala 2 of the local species of Amisognathus ("Local Firebelly") — all high in trees, 20-25 ft up — and 2 ^{W 29}Tyrannoides types (same species seen yesterday) ranging widely, 6-20 ft up. A single hummingbird ^{W 30}XX — group briefly.

Flock as a whole quite noisy. Whitetails sing from time to time. NODWAH. Group probably well integrated. But inds. rather far apart. Difficult to tell who is in lead. Possibly Whitetails. Chick Attapites certainly in rear. Checks f — group repeatedly.

COMMENT: I only see the "blue and yellow-tanagers" briefly. I think that they may separate themselves from group quite soon. Another indication that "tree top flocks" and "scrub-flocks" are unusually "distinct" here ???

6:55 a.m. Approximately 100 yds further on. Same type vegetation. Single ^{W 1}Albi flies by. Apparently alone.

A few minutes later, a couple of yellow-bellied birds flit by, low in scrub. Basileuterus-types ??? Then I hear 104 2 ^{W 33}Whitetails XXVII singing near by. And then a single

✓ 343

♀ *Albi* appears low in scrub nearby. This must, I think, be classed as a mixed flock. Certainly not the mixed flock seen earlier this morning (altho some of the birds included may be on their way to join the first group).

7:15 a.m. See an apparently single *Local Towhee*, 3 ft up in low second growth scrub. Apparently alone.

Then hear more Whitestart CXXVII Song in distance. NODWAH. Then shuts up.

NOTE: General aspect of the VSTF here is quite reminiscent of the first stop of the *Toliveria* at Merida.

Everything very quiet 7:25 a.m.

Then more Whitestart CXXVII Song down hill. NODWAH. Sun beginning to reach this area 7:31 a.m.

A few minutes later, there is a general recrudescence of bird noises. But, unfortunately, I can't see the individuals involved. Certainly include *juvamaris* and others.

Then more Whitestart CXXVII Songs. NODWAH. But the Whitestart songs apparently stimulate something else (perhaps a *Basileuterus* type?) to Rattle. Complete overlap.

8:10 a.m. Approximate region where first flock seen this morning. See pair *Chick Attapetes* moving thru scrub edge grassy field. Only a few inches above ground. Quite noisy. But definitely alone.

There definitely do not seem to be any thrushes here!

Fog starting to come in, patchily, 8:20 a.m.

Ending observations 9:20 a.m.

It rains hard most of the afternoon. But then it gradually

lets up a little. Until finally it is so light that I decide to take a walk. Start out 4:50 pm. Going in a different direction. Along "highway" leading up hill from station.

Almost immediately see group of 3 Sooty Thrushes
es. Usual species. In low second growth scrub bordering "pasture"
 (actually a field cleared for a future pine plantation) Moder-
 ately mossy. Lots of "PN"s. But definitely alone.

3:10 p.m. Just a few yards further up. See a pair of
Brewster's Ruddy Flycatchers. Uttering R's. And flycatching Per
ching 2' - 6 ft above ground. A single White-throat XXVII
→ Brewster's Ruddies. Then White-throat disappears. Leav-
ing flycatchers ^{W 6} apparently alone.

Rain getting heavier again.

5:35 pm. A few more hundred yards along road.
Low second growth scrub along edge, backed by VSTF further
back. See pair of birds. One is fly catching, from the ground,
while other is flitting thru scrub 6-10 ft up. These birds are
peculiar. At first I thought that they were Slate-throated White-
starts. But now I think that they are "Brown Whitetails".

XXX. (SEE BELOW). They move on. But immediately I

saw a single ^V~~W~~ Albi, just across road, 2-4 ft up. And
then 2 ^V~~W~~ Thick Attapetes, 1-2 ft up, only a few yards away.
One bird adult, the other juvenile (this would suggest that
breeding season is just over). Then see ^V~~W~~ single Whitestart
CXXVII, 4 ft up in scrub. And then 2 large woodcreepers
(not same species seen earlier), 6-20 ft up trunks large trees
10-25 ft away.

I think that all these birds must be classed as belonging to a flock. Including the Brown Whitestarts. Latter probably only "transient" members of group. But the rest may be highly integrated. No obvious leadership. Cheek Atlapetes noisy. Other species fairly quiet.

Rain is so bad now that I have to turn back.

About 100 yds down road, come across pair of birds. Apparently Brown Whitestarts. Almost certainly same individuals seen a few minutes earlier. Again one is flycatching from ground while the other flits thru scrub. About 10 yds away I see 2^{W 10} Cheek Atlapetes, 6-10 ft up in small trees. Certainly not the same individuals seen earlier. The two species apparently ignore one another. And move in different directions. Thus, I think that they should both be classed as alone.

Stopping observations 5:45 pm.

COMMENT: I have no idea what CXXX really is. Whitestart (adult or juvenile), flycatcher, or what have you. But it probably was what I called "plate throat" yesterday. If so, the role of the species (or form) in mixed flocks seems to be fairly clear (on my observations so far). An occasional associate. Occasionally joining and/or joined by other birds, but not sticking with them. And, I should add, that I have never seen it close to a Whitestart CXXXVII when the two species are associated in the same flock. All very reminiscent of the relations between the two species of Whitestarts at the Parollones above Cali!

NOTE: It is my general impression that the avifauna

here has a surprisingly "high altitude faunas" for its actual elevation above sea-level. Why?

August 14, 1967
Santa Marta Region

Going to work along "highway" above station again this morning.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

6:45 am Going to walk along side path. Leaves "highway" at 14400 ft. Apparently goes up into VSTF

Almost immediately come across large flock. (Probably partly the same as flock seen earlier this morning, but it can be counted again now.) Difficult to see in forest, but includes at least the following: 1 large ⁴⁶rufous tree-creeper (30 ft up on tree trunks), 2 ⁴⁶small yellow-bellied flycatchers (probably same species — hanging 15-20 ft up, usually in smaller trees), one ⁴⁹yellow-bellied tanager (Local Yellow-belly? — seen once 30 ft up in tree), one large ²⁰thrush or flycatcher-like bird (pale gray underneath — something I have never seen before — hanging 20-30 ft up in trees). Also at least ²3 ⁴⁶chick ⁴⁶Atlapetes. Including "begging" juvenile. Hanging 2-20 ft up. At least 1 ⁴⁹Whitstart CXXVII sings occasionally. NOT W.A.H. At least 1 ⁴⁹"Brown Whitstart". Both Whitstarts hang 10-30 ft up in great variety of vegetation. Once, at least, the "Brown" repeatedly follows and "supplants" the CXXVII. This looked almost like a young following a parent

and demanding food!!! Can "Ergon" be only juvenile form of EXXVII ??? Also, group is visited by several hummingbirds (species not identified - can't even tell if all the hummers belong to the same species).

Group also includes 1 squirrel. Large. Largely bright rufous all over. Possibly some white on belly.

Group as a whole moderately noisy. Obviously highly integrated. But birds often quite widely dispersed. Can't tell who, if anyone, is leading.

COMMENT: It seems to me that highly integrated flocks here tend to be more widely dispersed, on the average, than comparable flocks in some other parts of the Andes. Is this causally related to the fact that there are comparatively few species here ???

NOTE: Forest here is not tall. Most trees no more than 20-30 ft tall. Due to edaphic factors. (slope is very steep.)

7:45 a.m. Go on uphill thru forest. To 7500 ft. Where forest becomes lighter and there is a lot of bamboo. From the sounds I hear, it would appear that the flock is moving parallel to me and still maintaining its cohesion.

Lots of Whitestart EXXVII songs. All NODWAH

ADDITION. Now I see that there are at least one pair of each of two different species of creepers more or less associated with this group. Essentially following.

8:10. See a single Tanager. Apparently alone.

Starting back down hill 8:15 a.m.

10:22 a.m. Walking along road. 7525 ft. Flush a single ¹³Chick Atlapetes from low fern bamboo scrub on old slide

Silent. Apparently alone

10:25 a.m. Just a little further along road see large diffuse flock in low scrub on another slide. Includes at least 6 Local Yellowbellies, 2 Chick Attapites All 1-4 ft up. Yellowbellies j → Attapites. Group is also visited by 1 ♂ Albic and 1 ♀ Albic (at different times and in different places). And also 1 Zonotrichia. Then I see that there is one Sooty Thrush in scrub near Yellowbellies. Also 1 Creeper in nearby tree.

Then hear Whitstart XXVII Song nearby. Completely overlapped by distant Thalass Song

Local Yellowbellies would seem to be more autogregarious than other forms of Auroquathus

NOTE: This may be (partly or largely) same large flock seen yesterday afternoon and earlier this morning.

Now see there is another Chick in adjacent edge VSTF. More Whitstart Song completely overlapped by Thalass.

Going a few feet further into VSTF, see that there are quite a lot of other birds around. Include 2 "Brown Whitstarts" fly catching from ground. Get a good look at these birds. Certainly not either Slate throat or XXVII. Also 1 Bright Ruddy flycatching low and high. Also 1 Agave-type, high in tree. And 5 or 6 small birds high in trees. Probably Euphonias

I think that all these birds (except the Thalass) must be considered as belonging to the same diffuse but probably highly integrated flock — the flock of the area.

11:00 a.m. A little further on. See single Bright Ruddy flycatching in usual place. There is a single Chick on ground only &

few feet away. These birds definitely do not belong to large flock.
Then Chuck flies away leaving Buddy alone. Chuck
apparently joins 1 or 2 other inds. of its own species in low scrub.
Also apparently alone now.

Stopping observations 11:15 a.m.

This afternoon, going straight up above the station,
into the VSTF, with a guide hacking a way with a machete.
Slope very, very steep. Reach 7950 ft 2:35 p.m. So far, there
has been a quite fantastic amount of undergrowth in the forest.
Lots of bamboo and other things. Apparently a lot of sunlight
reaches the lower layers. Presumably because trees are falling all
the time. On the whole, this is very unlike any other mountain
forest I have worked in.

Fog rolling in 3:00 p.m.

Hear birds from time to time. But, of course, they
are frightened by the sound of the machete.

Reach altitude of 8075 ft 3:15 p.m. A small "plat-
eau" Rather open, "upper VSTF" type trees, with lots of bamboo
scrub underneath. Birds moving around in the tree-tops, but I
can't identify them (yet). Certainly a few large creepers.

3:15 p.m. Another part of the same plateau. Fog has
become noticeably thicker in the last few minutes. But it doesn't
seem to have produced either an increase or a decrease in bird
sounds in general.

I hear a few bird sounds scattered about. But nothing
which sounds like a flock.

Going to start gradually down hill 3:45 p.m.

Arrive at bottom edge VSTF 4:20 p.m. Fog quite thick. Everything dead quiet. (Perhaps fog does have a depressing effect here after all?)

See a single Hummingbird XX feeding on blackberry flowers. Quite alone. NOTE This species is not usually a commensal of flocks.

Fog lifting momentarily 4:33.

Hear Whitestart XXVII song downhill. NODWAH. Flutters up. Then everything is dead quiet again, for a long time. Even though the fog has stayed lifted.

Fog comes in 5:00 p.m. Nothing happens for a few minutes. Then Whitestart XXVII sings. NODWAH. Stops. When song stops same Whitestart sings again. NODWAH. Stops. A few minutes later, fog lifts.

5:07. See mixed flock low in scrub edge VSTF. Includes 2 Chick Attapetes and 2 ^{Wags} Synallaxis (either ad. and juv. of same species or, more probably, ads of different species). All birds ranging 1-3 ft up. Never coming out from cover. Very quiet. But flock obviously highly integrated. Birds very close together. First one species in lead, then another.

Some minutes later, see single ^{LA} Albi same area. Silent and alone. Feeding on usual orange flowers.

5:20 p.m. See (another?) single ^{LA} Albi some distance away 4-5 up edge VSTF (Albi) silent and alone.

5:32. Further along path, see single White-headed low in scrub along edge VSTF. Silent. Alone.

Everything seems to be very "coy" this afternoon!

NOTE: The Whitebreds here seem smaller than in all or most other parts of the Andes. Presumably another species of the same genus.

Fog very thick now, 5:34. Everything quiet.

5:42 There is a sudden outburst of bird noises. At least 3 species. Not particularly close together. Fog still thick.

But then fog lifts and sounds stop almost simultaneously.

See another single Albis, silent and alone, 2-4 ft up scrub edge VSTF. This would appear to be optimal habitat for Albis. (And I should stress that the scrub here is much denser — and apparently wetter — than the scrub under the Thelass Surging trees where I worked this morning.)

Starting down hill 6:05 pm.

NOTE: For purposes of statistics, this afternoon's observations should be counted only from 4:20 pm (to 6:05).

August 15, 1967
Santa Marta Region

Going to work along "highway" again this morning.
SEE TODAY'S NOTES ON MIXED DIGLOSSINI !!!

8:50 am Just below where "the" flock usually seen Very mixed vegetation edge road. Come across small group. Includes 2 Bright Ruddy Flycatchers. Flycatching at all levels, 2-25 ft up. At least 1 Brown Whitehead. Flycatching from ground and in scrub 2-6 ft up. 1 Slate-throat, flycatching and picking insects off leaves, in scrub 2-12 ft up. Also family of 3 Chick all

apetes (including juv.) Feeding in scrub and also vines on trees, 2-20 ft up. Then I hear Whitestart EXXVII singing not far away. NODWAH. Stops.

Group as a whole well integrated. Only juv. Chick Attapetes is noisy. It "beeps" almost constantly.

NOTE: There does seem to be a definite "Whitestart complex" here (also). Different species avoid one another, even when associated with same flock. And the "Brown" definitely does seem to be a member of the complex — irrespective of its phylogenetic relationships.

ADDITION. A large, more or less ruddy, quail just flies out of the scrub. Conceivably it also may have been a "member" of the flock.

9:15 a.m. Further down road. See pair ^{W/1141} Bright Ruddies ¹¹⁵⁰ Flycatchers. Flycatching over slide. Also hear Chick Attapetes PN's nearby. This is exact same place where I saw a Chick - Bright Ruddy group yesterday. Group presumably still in existence. I.E. small as well as large groups can be "semi-permanent".

9:40. Area mixed scrub and scattered VSTF trees just above station. See single Chick Attapetes low in bamboo edge road. Uttering PN's but apparently alone.

Stopping observations 9:45 a.m.

This afternoon going to work directly above station, but not exactly where I have worked before. Arrive lower edge VSTF

2:45 p.m. It is hot. Rather windy. Occasional patches of fog.

2:47 Hear 1-note Hummingbird Song. NODWAH. Stops. Otherwise everything is dead quiet. Both when the fog is in

and when it is out.

Albi

3:05. See a large hummingbird (not identified) feeding on species of orange tubular flower favored by Albi and XX's.

Albi

3:10 Hear a few more sounds (e.g. wren songs, furnarid calls) while fog is in (and thick). Then hear Albi-type R. NODWAH

Albi

3:32. More 1-note hummingbird song. Completely overbearing some "Ja seee seee seee" songs in distance. Latter might be Whistle songs of Atlapetes or Plate-throat, or something else significant.

Stopping observations 5:50 pm

August 16, 1967
Santa Marta Region

Going to work along "highway" again this morning.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

17

7:17 a.m. Up by highest ravine with USFF trees and ady acut scrub - 14625 ft. See small mixed flock. Includes 2 ^{W 346} Local Yellow-bellies, 2 ^{W 346} rufidocox-type flycatchers, 2 ^{W 346} Whitestart CXXVII's (1 adult, 1 "begging" juvenile), and 1 ^{W 346} Zonotrichia. Zonotrichia stays low. All others range 2-18 ft up. Yellow-bellies in lead. Zonotrichia f ———→ Yellow-bellies. Whitestarts f ———→ group. Flock as a whole quite integrated. Rather quiet, except for juv. Whitestart.

Albi

A little further on, see single ♀ Albi. 2 ft up in dense low scrub (quite apart from trees). uttering "CN's". Definitely alone.

Scan Then hear CXXVII song downhill. NODWAH. Then hear several Scans singing downhill. Also NODWAH. Also some sounds which may be Scan flight display 7:31 a.m.

Sun has come out and is beginning to reach this area.

First Scan Walking back down road. 7:45. Above first Nocti area.

Then hear Scans singing downhill. NODWAH. Stop. Then hear Albi-type R. NODWAH.

7:55 a.m. Down by first Nocti area. See single Chuck Atapetes 1 ft up low scrub. Silent and alone. (This presumably is same individual seen with flock yesterday. Another indication that association of Chicks with flocks is facultative.)

8:20 a.m. Down by "the flock" area. See a very large group up crossing road. Partly, but not completely, same as group seen on earlier days. Today includes at least: ¹⁷¹20 "Plain Chlorophomas" (CXXXII). (These are undoubtedly the same as the birds that I thought were Euphomas the day before yesterday.) ¹⁷³2 Yellowbellies, At least ¹⁷⁷4 Chuck Atapetes. ¹⁷⁴1 Albi. ¹⁷⁵1 White-tail CXXVII. ¹⁷⁶1 "Brown Whitetail". ¹⁷⁸1 small tree creeper. ¹⁷⁹1 Bright Ruddy Flycatcher. ¹⁸¹1 Flycatcher of a species I have never seen before (brown cap & back, yellow supercilious).

Albi Group as a whole highly integrated. Yellowbellies and/or Chuck Atapetes definitely in lead. Whitetail CXXVII definitely bringing up rear.

Vegetation here is very mixed. USTF trees and all sorts of scrub, as well as bare earth of road and embankment. The Chlorophomas stayed high in trees, 20-30 ft up. The Yellowbellies stayed in scrub and low trees, 3-10 ft up.

Albi
The *Atlapetes* stayed low, 1-4 ft up. In scrub. Particularly bamboo. The *Albi*, rather surprisingly, stayed in trees, 10-25 ft up. The *Whitstart* XXVII also in trees, probably approximately same level. The *Brown Whitstart* stayed low in scrub and also flycatcher from ground. The *crepper* was seen only on tree trunks, 10-15 ft up. The *Bright Ruddy* flycatcher at all levels 2-25 ft up. Other flycatcher seen only in small tree, 10 ft up.

Albi
Thalass
Group as a whole very noisy. *Chlorophanas* uttering lots of nasal notes. Probably also thinner, higher "CN"s. Constantly fighting among themselves. Lots of chasing back and forth. The *Yellowbills* were quiet or silent. The *Atlapetes* also were noisy. Lots of loud "Greetings". (Actually, I think that there was at least 1 individual more than a single family group of the species present.) The ♂ *Albi* uttered occasionally R's, NODWAH, but was generally quiet. The *Brown Whitstart* was apparently silent. The XXVII sang several times. Always NODWAH, except for *Thalass* in background. (*Thalass* may also have overlapped *Albi* R's, but I am not sure about this.) The *Bright Ruddy* uttered R's. The other flycatcher seemed to be silent. The *crepper* also seemed to be silent.

The 2 *Whitstarts* were never close together.

All or most of the species seemed to be picking up insects in their various ways. (The only probable exception were the *Chlorophanas*. But I couldn't see what they were eating, if anything.)

In spite of their number and conspicuousness, the *Chlorophanas* seemed to be only minimally nuclear. Rather higher in

tree than most of the other members of the group. And none of the other members of the group seemed to be paying much attention to them.

Group as a whole doesn't seem to be making any very rapid progress in any particular direction. Birds still around in general neighborhood 9:00 a.m.

10:35. Below "the flock" area. See 1 ^{1.5.54} Chick Atlapetes 4 ft up in mixed scrub. Also can hear juv. Chick low in bamboo nearby. And see ^{2.1.56} Slate-throat (defunct) flitting 2-10 ft up bushes and small trees. This can be considered a non-integrated flock.

^{W. 24} A little further down, come across another family of at least 3 Chick Atlapetes in bamboo scrub-edge road. Juv. "bigger" steadily. These birds must be considered alone.

(Incidentally, this species seems to be remarkably fond of bamboo. This may help to explain why Bush-capped Friches are so rare here.)

Then see single ^{2.1.54} Bright Ruddy Flycatcher alone.

10:45 a.m. Still further down road. Small ravine with bush and rather high second growth vegetation. See single ^{1.1.54} Whistling ^{2.1.56} CXXVII. Silent. Flycatching 1-10 ft up. Can also hear at least 1 ^{1.1.56} Chick Atlapetes nearby, low in scrub. Then 3 ^{1.1.56} Local Yellowbellies ^{1.1.56} group. Moving 4-10 ft up. Quiet. Yellowbellies not feeding. CXXVII eventually stops flycatching. Starts to pluck insects off leaves, like a *Conurostrum*!

Stopping observations 10:55 a.m.

This afternoon going to climb way up into forest above station, just as we did day before yesterday. Start into USTF 2:15 p.m., and climb fairly rapidly up to 7900 ft. Fog is

in all the time. We also are getting little showers of rain. At least when it is not raining, we hear a lot more birds' noises than the day before yesterday, when the weather was better.

Reach 8075 ft 2:55 pm

Go on up to 8200 ft + But all the higher part is very dense bamboo scrub- and second growth forest (thin saplings very close together. Doesn't look very promising.

And then the rain comes down in buckets!!! We have to turn tail and retreat to the station.

Rain eventually stops. So I go for a walk along "high way". Reach first patch of scrub just above station 4:30 pm.

See a group of 2 ¹⁹¹Chick Attapetes. 3-6 ft up mixed scrub. b. Honey. But apparently alone.

5:05 pm. A little further along. Another area of very mixed scrub. See group of 3 ¹⁹⁴Chick Attapetes (incl. 1 juv.), 1 ¹⁹⁵late throat, 1 ¹⁹⁶Albi. All ranging 2-10 ft up. Chicks seem to be nuclear. Very conspicuous. Juv. begging all the time. But they certainly are not in lead. ♂ Albi → group. ¹⁹⁷late-throat f → ♂ Albi.

Also around in the same neighborhood, but only briefly, are a ¹⁹⁸rufous Bright Ruddy Flycatcher and a ¹⁹⁹small Rummungbird - probably ~~XX~~. (It differs, I think, from the other ~~XX~~'s seen earlier in that the rufous or cinnamon of the chin and throat is "cut off" abruptly at the middle-lower part of the breast - instead of "dribbling" down onto the abdomen. But this might well be an individual variation. Or my earlier observations may have been wrong.) I think that both the Ruddy and

(20)

the hummingbird must be considered part of the group. Group as a whole may not be well integrated.

Alb The ♂ Alb spent most of his time taking nectar from very small blue cup-shaped flowers (growing in clusters). Also apparently looked for insects on leaves.

Alb COMMENT: It has just struck me that I have seen many more ♂ than ♀ Albs with flicks. This cannot be purely an artifact. Not due solely to the fact that ♀'s are less conspicuous. Must reflect a real sexual dimorphism in habits.

NOTE: There is one point which I probably have not stressed sufficiently strongly in my notes so far. The Slate-throated Whitestart does seem to be a regular or almost regular commensal of flocks in this region.

5:32 pm ¹ The "flock" area. See small group. ¹ WH 201 3-4
² Chlorophanes, ² Brown Whitestarts. All 10-30 ft up in trees.
³ Also hear Bright Ruddy R's warily. Another small and probably not very well integrated group.

Lots of thunder in distance. It is going to rain again. I am starting back down road.

See lots of sooty Thrushes. All alone.

Stopping observations 5:45 pm

NOTE: For statistical purposes, the whole of this afternoon's observations should be counted as 1 hr 00 min.

CORRECTIONS AND ADDITIONAL INFORMATION:

Some of the technicians from the CVM came up here today, and I learnt a lot of things.

There are supposed to be two rainy seasons here.

one in April and May, the other September - November. So we are supposed to be at the end of a dry season now! And God knows it is not enough!

All the land around here is known to have been greatly affected by man. Most of the plantation around the station was once pasture (and it looks it!). Most of the forest has been burned repeatedly (and it looks it too!).

There may be ways of getting to higher altitudes

At the moment, the best but would seem to be to go from Baranguilla to Valle Dupar (by air), then to Pueblo Bello (by bus), then to San Sebastian (God knows how), and then higher yet (by mule) to stay with the local Indians. (This is essentially an approach to the Sierra Nevada from the South.)

In a couple of years, there may be an easier way. The Colombian authorities are planning to build a new television relay station on Pico Kennedy, another and higher mountain of the Sierra Nevada.

August 17, 1967
Santa Marta Region

This morning, going to work along "highway" again.
SEE TODAY'S NOTES ON MIXED DIGLOSSINI

7:15 a.m. Ridge VSTR ravine by fruit figs area. See small group of 1 ²⁰¹¹ Whistant CXXVII and 2 ²⁰¹¹ Chick Atlapetes in adjacent woods. Chicks 1 - 3ft up CXXVII 2 - 10ft up. Group is

3 1/2
"ranted" by at least 2 hummingbird "XX"s. Whistertant
brings from time to time. NODWAH.

Then a huge road wrecker comes along road. Making
wrecker racket. This seems to provoke a lot of songs by the
Whistertant XXVII. (Good evidence that the songs of this species
are hostile.) And these songs, in turn, provoke a lot of the "usual"
rattles. Are these rattles with Whistertant songs uttered by Chick
Atlapetes ??? I rather think so!

17:28 am Hear more Nocti songs up hill. NODWAH.
Stop. (NOTE: These certainly never provoke rattles by anything.)

COMMENTS: The rattles which tend to accompany XXVII
XXVII songs would seem to be "ideally" adapted to increase the
conspicuousness of a group and thus attract additional members.

The XXVII - Chick Atlapetes relationship would appear
to be the strongest of all the "friendly" relationships in this region.
Probably stronger than most comparable relationships in other parts
of the Andes. Of course, the isolation of this area probably provides unu-
sually favorable opportunities for developing such relationships.

17:45 am. Walking further up road. Region of low fern
scrub interspersed with low bushes. See groups of 4 Chick Atlapetes
ca. 1-3 ft up. Noisy. But definitely alone.

8:15 am. Back first Nocti area. See single Nocti,
perched silent and alone, in low scrub below road. Flies up hill.

26 W 213
Then see group in VSTF and scrub of ravine. Includes
2 Whistertant XXVII and 1 Slate-throat. Both species fly
calling 3-12 ft up, but not together. XXVII songs once. NO
DWAH. Slate-throat quiet or silent. Also see 1 Chick Atlapetes

3-4 ft up in nearly bamboo scrub. There also are 2 ♂ ^{N/2/1/4} ~~Albes~~ ^{Albes} c-12 ft up in trees. Then I see a fight between 2 black ^{Dioplosa} ~~Dioplosa~~. I thought that this was between Albe and Nocte. In any case, Albe flies away. Nocting follows. And Nocte - if there was one present - disappears without my seeing it again. The other ♂ Albe stays around for some minutes more. Then flies off also.

During the ^{Dioplosa} dispute, the group also was "visited" by one or two small hummingbirds.

Walking further down hill, I find that bull-dozer is working in "the flock" area. So I continue down.

COMMENT: It occurs to me that some of the areas along this road where I never, or almost never, see birds or flocks look just as "good" as some areas where birds are common. Does this suggest that the region is (still) "underpopulated" — as a result of earlier cutting and burning ??? ^{N/4/1}

9:10 a.m. Find a couple of Bright Ruddy Flycatchers' chas in a usual place. Noisy. But definitely alone.

Stopping observations 9:30 a.m.

Santa Marta — San Lorenzo 1767

No. Inds. seen Alone

No. Inds. in Flocks

40
 30
 98

55
 110
 165
 219

69.08 %

No. Flocks seen
 26

No. spp. per flock

11 2
 7 2
 3 2
 2 14
 5 4
 8 (20) 9

No. H. O. Flocks seen
 13

11 2
 2 3
 2 5
 (10) 4 3

Largest No. Inds. 1 flock
 32
 (Chlorophanes)

(12) 4
 2 2
 3 2
 2 3
 (14) 5 (28) 4

Santa Marta - 1957

Hours Spent

| | | |
|-----------|-------|--------|
| August 12 | 3 hrs | 00 min |
| August 13 | 4 hrs | 00 min |
| | 1 hr | 00 min |
| August 14 | 6 hrs | 00 min |
| | 1 hr | 45 min |
| August 15 | 4 hrs | 30 min |
| | 3 hrs | 00 min |
| August 16 | 5 hrs | 30 min |
| | 1 hr | 00 min |
| August 17 | 4 hrs | 00 min |

33 hrs 45 min

Sierra de Mucuna

April 3, 1965
Pico Espejo
Venezuela

Arrive patch of woods, cutting into Paramo, not far from
Telefonos #2, appr 3452 m. 17.45 am

Some crows moved flock almost immediately. Includes
at least 1 PL Atlapetes, several other birds.

8.15 See single PL Atlapetes (possibly same bird as before)
By itself. Silent. In low open scrub.

It is suddenly supplanted (definitely attack) by one of the
local hummers. The "White throat". (no. I on last Merula hum-
mers). Moves off without resistance.

Everything very quiet 8:25 am

Lots of thrushes around here. Fairly light grayish brown
Orange bill, feet, and eye ring. In pairs.

10:20 am Finally come across moved flock. One pair of PL
Atlapetes. One pair Yellow-bellied Poecilothraupis. In region of fairly tall,
scattered trees, with lots of scrub below trees. (Probably same area where
PL's seen earlier) Groups quite well integrated. PL's usually somewhat
lower than Yellow-bellies, but there is great overlap. PL's = 10-30
ft above ground. Yellow-bellies 15-40 ft above ground. Both species
quite silent. One Yellow-belly \rightarrow PL. Twice PL \rightarrow Yellow-belly. (What seems to
be happening is this: PL's advancing by hops and short flights. They
stay in one spot longer. Yellow-bellies usually advancing by longer flights.
But also staying in one spot longer. Then, when Yellow-bellies get left
behind, they fly to and pass the PL's. Then the PL's eventually catch

up with and join the Yellow-bellies. "Leapfrogging")

10:50 a.m. Further up hill, along a ravine, come across what is undoubtedly the same mixed flock. Behaving as before - except this time I hear that the Yellow-bellies are uttering lots of soft "Secret" notes. Once PL f → Yellow-belly. There also is a single Glor in the neighborhood. Once it seems to f → Yellow-belly. Possibly coincidental. In any case, the Glor soon moves on by itself.

Incidentally, this area is at least as high as Sclerocarpus

Station # 2

PL's and Yellowbellies still together 11:10 a.m. 1 PL f → Yellow-belly. 1 Glor f →. Then Glor leaves again. Others do not follow.

12:10 p.m. Somewhat further on. Come across loose association of 2 Yellow-bellies. Associated with White-bearded Flycatchers. Once White-beard follows → Yellow-belly. There also is a single Glor, feeding on bamboo, fairly low, about 50 ft away. It may be following the Yellow-belly. White-beard is a casual, irregular way. About 150 ft away from the Yellow-bellies (and about 50 ft away from the Glor) is a single "Red Woodpecker" (LXXV). Apparently not paying attention to any other bird. About 20 ft from the Woodpecker (and same distance as Woodpecker from Glor and Yellow-bellies) is at least one PL Atlapetes. It doesn't seem to be paying any attention to any other birds. But it is just conceivable that it is following the Woodpecker.

12:30 p.m. Going down hill. Come across a pair of PL Atlapetes. Silent. Definitely alone. These may be the same individuals seen at one earlier today.

12/34 p.m. A couple of hundred yards further on. See at least one Yellow-belly in dense thicket. Also there is at least one PL close by. I can't tell if they are definitely associating or not.

Fog turning into rain. Leaving 12:50 p.m.

COMMENT:

Certainly nothing is breeding here now.

I think that the PL Atlapetes must have a special preference for the Yellow-belly and/or vice versa. Some of my observations at the Barro Colorado Negro in 1962 would support this.

April 4, 1965
Pico Espejo

Work slightly below Teleferico #2 early in the morning. Lots of flocks but no signs of any mixed flocks. Nor any individual PL Atlapetes or Yellow-bellies. Why? Possibly because there are very few tall trees there.

Then go uphill. Here there are more tall trees.

10:15 a.m. See pair PL Atlapetes. Definitely by themselves. Low in scrub-edge bamboo-thicket, 1-10 ft above ground. Near but not under trees. Uttering occasional their faint "seet" notes.

10:30. Reach high point reached yesterday 11,125 ft.

Fog coming in.

11:05 a.m. See patch of forest which looks more optimal for many mountain tanagers & honeycreepers (e.g. Capsulimimus spp.) than any I have seen before. In small ravine. Scrub. Even includes at least one tree with pink flowers (cup-shaped). Apparently same species as tree the local D.

glaciers were found of above Hudsonian in Bolivia!

But it is a difficult place to work and fog is thickening
In any case, I am quiet

Finally leave, 12:30 p.m., without seeing anything
more of interest.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

2. TAXX7
This afternoon, ca. 6:10 p.m., I saw what appeared
to be a mixed flock from my bedroom window. In pouring rain
group composed of one Elaenia (presumably same as large species in
Panama), 2 BT's, and one individual which may have been
Delottrampus castaneiventris. (Bright blue crown, medium
dark dull blue upper back, wings, tail; black facial mask
pinkish buffy below. I didn't see if it had a white throat
or not. Possibly back, wings, and tail looked darker than they
really are because they were wet.)

COMMENT:

Mixed flocks certainly are not common on Pico de
Espejo around 3500 m. now. Probably because all species,
except glen and some sub-oscines, are rare there. Actually
this area has as depauperate a fauna as anywhere I have
ever been in the Andes.

April 5, 1963
Panama La Negra

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

6:58 a.m. See single White spectacled Whitestart perched alone in

Gen

tree 20ft above ground. Singing at fairly frequent but irregular intervals long reminiscent of Andean birds, but shorter. Also less lapemayeri-like.

Quite a lot of the grayish thrushes (same as on Pico Espejo) around. In pairs or as single birds.

Everything very quiet. 7:15 a.m.

The mountain Cotingas are in flocks, but by themselves alone (Even though they are conspicuous and quite noisy)

3 7:48 a.m. A single PL Atlapetes hops by. In open grass. Apparently alone. But just conceivably following a pair of Andean Sparrows. Cobention. Now see that there are 2 PL's. Presumably mates. Young then even sweat way thru area low sparse scrub. Ignoring Andean Sparrows. Not being followed by anything either. One or both utter lots of them, weak R, high "Seeet" Notes. The leading PL also utters occasional brief bursts of "chatter" and R

Then both fly into slightly higher vegetation. Move around 3-5 ft above ground. Fall silent at same time.

There don't seem to be any Yellow-bellies around. (I haven't seen one this morning.)

5 8:03. Another area. Come across another pair PL's. Also moving thru low sparse scrub. Also noisy and apparently alone!

6 8:26. See a single Thraupis cyanocapilla bathing in water on branches of tall tree. Apparently alone. Ignores Cotinga 10 ft away, and does not follow the latter when it flies away. A few minutes later, flies off in another direction.

9 8:43. Come across group of 3 PL Atlapetes. Exactly where pair seen earlier (probably I overlooked the third bird earlier). Presumably same

by group. Moving thru low sparse scrub. On ground and in bushes a few inches above ground. Very noisy, uttering twitters, rattles, and other song notes. ~~Quite~~ quite alone.

Lots of White-bearded Flycatchers around. Alone.

Bag starting to come in 8:55 a.m.

13
14
Finally in fruit for 9:01. Silent and alone. Feeding on clusters of small pale yellowish white flowers.

15
9:20. Found another PL. Definitely single and alone. Perched or passed in bush 7 ft above ground. Uttering faint "tute" or "tit" notes.

Leaving 9:30 a.m.

According to my altimeter, now, the altitude here is 8,725 ft. (which suggests that my altimeter is very wrong).

COMMENT.

I. Saw quite a lot of BT's around hotel while watching local Deglorini this afternoon. They frequently occur in close contact with other species. But apparently purely "coincidental" (There are so many birds around this area that everyone is crowded.) No indications that BT's are joining and following or being joined or followed.

O.K.
II The general situation at Paramo La Negra is a surprise. I certainly would have expected to see more in the way of mixed flocks than I did this morning. But I think I may be able to explain the discrepancy.

Mixed flocks probably are absent now because certain vital species, which were present in September, 1962, have left the area now. There is nothing around now which tends to react to the PL Attapetes frequently (e.g. the Yellow-belly seems to be also

Inter

cut). Similarly, the Parulaterus species, which might attract such things as Inter and Myioborus also seem to be absent.

In general, it is quite obvious that the avifauna here is much less diverse now than in September, 1962. This is rather surprising, as the vegetation doesn't seem to have changed at all (except that flowering is different).

Where are the missing species? Have they all gone down hill? Because of bad weather???

III It has just occurred to me that all or almost all the species which are "really" panmix nuclear throughout the whole of the higher part of the Andes show striking similarities (in addition to their roles in inter-specific reactions). Atlapetes, Chlorospingus, Hemispingus, Parulaterus. All have similar vocal repertoires, body proportions, and general type of coloration. These similarities extend to species which are not sympatric, and also to species which do not play a special role in mixed flocks. Thus, the similarities cannot be the result of mimicry. Are all these genera really closely related to one another???

April 6, 1965
Paramo la Negra

Arrive same place as yesterday 5:55 a.m. Still very dark. Clear. Cold. Everything quite silent.

Now my altimeter says 9025!

As yesterday, there is very little dawn song. And certainly nothing that sounds like a diglossine, tanager, or Myioborus.

Nothing at all of any interest 6:35 a.m.

15
17
20
Alto
Hear first Whistertail song. One short phrase. The bird goes right by a noisy group of 4 or 5 Disputing White-bearded Flycatchers. Also joins about 10 ft away from single ♀ Alto feeding quietly in bush. The Whistertail remains silent for some minutes thereafter.

22
2
H
2
3
Then, 7:00 a.m., a group of Basileuterus appears. 2 or 3 individuals. In distance, passing rapidly up hill (as in 1962). Apparently lutoviridis (XI). Very noisy. Uttering lots of Rattles and Ratty-flourishes. Apparently quite alone at first. But then the Whistertail drifts over in their direction. Probably comes within 20 ft of them. Also, the Whistertail begins to sing again. Utters several phrases. Apparently stimulated by the lutoviridis sounds. But there is little or no overlap between the vocalizations of the two species.

23
The lutoviridis soon move off. Whistertail apparently remains behind. Utters occasional song phrase at irregular intervals.

This was a nice "beginning" of an attempt to form a mixed flock which didn't quite come off.

217
Incidentally, these lutoviridis ignored a group of noisy White-bearded Flycatchers (probably same group seen earlier). In general, the White-beards are both noisy and conspicuous in their movements. Have great variety of vocalizations. But they are not attractive to other species. I.E. conspicuousness is not enough, per se. Also, I.E., this suggests that the reactions of other species to Basileuterus types are special inter-specific preferences.

31
7:20
Corymyza
sings. 1 adult ♂, 3 ♀'s or juvs. Sitting quietly top dead tree. Quite silent. Definitely alone. Soon fly away (not in same direction as the

(1)
B. luteoviridis).

33 7:28. Go on several hundred yards. Can hear B. luteo-
viridis again in distance up hill. Then a pair of Cyanocitta fly up
from down hill. Uttering "tacet" notes in flight. Then feed in low,
open, scrub. Possibly working their way up in direction of warblers.

Why are there so many more birds here today than yestern
ay ??? It certainly is somewhat warmer (T°) today!

34 7:37. See single P. Atlapetes. In low scrub. Defunct, alone.
39 Then see group Chlorophanes again. P. Atlapetes is with them
at first. But then it flies away. The Chlorophanes then fly off in another
direction 7:48.

40 7:57. See single bird feeding top tall tree. Looks like B. luteo-
viridis, but I am not sure that it is. Quiet. Not very clumsy. Bill
perhaps a little longer than I think is typical of Basileuterus. Is there
a Hemiprocne species here with a luteoviridis type pattern ???
In any case, this bird joins → a pair of PL Atlapetes. But the
43 Atlapetes soon fly on, and the puzzling bird does not follow.

45 This pair PL's goes on 50 ft or so. Then engages in vocal
boundary dispute with another pair of PL's. Lots of R's. Dispute lasts
at least a couple of minutes. But it does not attract anyone else!

Fog coming in 8:00 a.m.

Everything very quiet now.

46 8:25. 2 pairs of PL Atlapetes still disputing. Muddy. Still
quite vocal. 1 pair B. luteoviridis - types f → PL Atlapetes.
No luteoviridis types are silent. (Is this characteristic of "bush-
warblers" when they are following rather than being followed ???)

Fog lifting 8:30 a.m. In again 8:45. Clear again 9:00

Leaving 9:45 a.m.

April 7, 1965
Paraiso La Negra

Arrive usual spot 6:15 a.m. Just starting to get light
It is much colder today than yesterday. Also hear
Dawn Chorus also somewhat louder. More thrush songs.

6:45 a.m. Almost nothing moving - except thrushes

6:48 Hear PL-type twitters in distance. Also, possibly,

Cy-type songs (up hill)

7. 116
WJ 2
CJ 2

6:55 Blue D. singing from top tall tree. 35 ft above
ground. Song sound like those heard yesterday. Again I only see bird
silhouetted against sunrise. But it looked as if it might well be Caer.

Intermittent song both before and after D. singing. No overlap

117
H 21
H 22

7:10 a.m. Group of at least 4 B. luteoviridis passes rapidly
up hill. Very young. Lots of Rattles & Flourishes. They were following

a group of 2 or 3 small birds. I didn't get a good view of the latter,
but at least one of them appeared to be green. Probably a Chlorophanes.

7:25 Sun has reached this spot now. It is warming up rapidly.
But everything is dead & dull and dead quiet

417

8:20. See single PL feeding quietly in blackberry thicket. Alone
(There is always a single PL, or a pair, alone in this area.)

418

Some distance further on, see another single PL alone feeding in
low sparse scrub.

419

Fog & cloud starting to come in 8:25

420

8:33. Come across mixed flock. Includes 2 or 3 luteoviridis type

Also 1 seen, like a house wren

W² ② ↓

Inter 2¹²
Inter 2¹²
Inter 2¹²
as, and 1 or (more probably) 2 Inters. Flitting about in tree, 10-30 ft above ground. Apparently all getting insects off leaves. Quite noisy. Uttering lots of CN-type sounds. Once Inter of luteoviridis. Once something attacks and chases Inter. I am almost certain the attacker is a luteoviridis. Chas accompanied by loud R. But the Inter soon reforms the group. Eventually, however, one or both Inter (s) fly (ies) off. Not followed by luteoviridis right away. But the warblers drift off and disappear a couple of minutes later. Can't tell if they go in same direction as Inter or not.

When this flock was first seen, there was also a mountain catbird in the same tree. But it ignored the flock and vice versa. The catbirds eventually flew off, and none of the other birds paid any attention.

There was also, however, a single squirrel with this flock. Its presence probably not coincidental. On outskirts. Possibly following flock. Stayed around for a few seconds after the warblers disappeared, then disappeared too. Feeding on vegetable matter. Silent. (Presumably squirrels associate with these insectivorous flocks in order to take advantage of the alarm reactions of the birds.)

The day before yesterday I saw a single squirrel not too far from this area. This animal definitely alone at the time. So squirrels are not obligate members of mixed flocks.

All squirrels seen here, this year and in 1967, obviously members same species. Medium size. Round ears. Grayish brown above. More rufescent or buffy below and on inner sides of limbs. Distal third of tail blackish. Proximal two thirds largely rufous.

8:57. See another single PL alone. In low sparse scrub.

There is also a flock of gold finches around here. To which no

one is paying any attention

51 9:12. See still another PL alone. And another! 9:16. Both in clumps blackberries

Leaving 10:00 a.m.

NOTE: I think that the PL *attapetes* may be joined and followed surprisingly infrequently now because they prefer very sparse and low vegetation at this time of the year. All or most of the other species which might be attracted to the PL's prefer denser and/or higher vegetation.

Arrive old area near Chonos de Milla 3:30 p.m.

Lots of BT's around. Not in flocks

3:41. Two BQ's chasing one another in Eucalypt. With "Zuet" Notes

3:43. See a single ♀ American Redstart alone

3:45. See an adult and a juv. BQ feeding in top trees, 20-30 ft above ground. Poking at heads of dead flowers. Definitely alone. Then adult attacks and chases the juv. Silent. Juv. flies away

4:22. Single ♀ Redstart still around, all by herself. Feeding in trees where BQ's fed earlier

4:25. Oh! Oh! Oh! Single bird Cauds in low bushes. Uttering loud "Tut" Notes. At first, I think it is ♂ Bari. Slatey-blue above. Buff, below. But then I see that it has a black facial mark, and a small finch or tanager bill. Flies on immediately. It occurs to me, however, that the "♂ Bari" I saw yesterday may have been this species (it was too far away for me to see clearly). Also possibly the "Dolothraupis" seen a couple of days ago (the bird here was in bad light - I could see that its crown was blue-ish, but not how bright it was)

I shall call this species "unknown LXXVI"

I wonder how LXXVI gets on with ♂ Barus when they meet
???? I also wonder if it plays a role in mixed flocks (viz. the small
only colored birds in Bolivia).

Glor 4:36. Good God! There is a perfectly typical single Glor
bear. Feeding in typical diglossine fashion on flowers Erythrina,
40 ft above ground. Quite silent and alone. No other diglossine visible
or available at the time.

This Erythrina is fairly isolated. In pasture dotted with
scattered trees and more or less hedge-like clumps of scrub.

According to my altimeter (see!), the area here is 5945 ft

XCC 4:44. See a single XCC in large, non-flowering, tree near
Erythrina visited by Glor earlier. 30 ft up. Silent. No other diglossine
around at the time

Baru 4:52. Then see an undoubted ♀ Barus in another non-flowering
tree (different species) 30 ft up. Silent. Alone. No other diglossine
visible or available at the time

Glor
BB Glor back in Erythrina a few minutes later. But only stays a
second. No other diglossine around at the time ("NOD"). After it
leaves, I see BB's in tree 50 ft away. Still chasing one another with
"Zheet"s (I presume these notes are Begging by juv.)

Baru
BB 5:01. ♀ Barus feeds in Erythrina. On same clumps of flowers
as Glor earlier. NOD. Flies on immediately. Back again immediately.
Ignores nearby BT's. Off again. Back again. BB's singing in distance
(far away). Ignored by Barus. Then Barus off again. Back again. NOD
XCC stays a long time, feeding on lots of flowers. Then flies off into tree where
see XCC seen earlier!

Barri
Flor
XCC
Flor
Barri
Flor
Barri

3.15. ♀ Barri back in Erythrina. NOD Feeds quietly for a long time. Then the Flor flies into the opposite side of the same tree. Place where it lands is at least 50 ft from the ♀ Barri. Flor silent. Apparently ignores ♀ Barri. But she definitely left just before, as, or just after the Flor landed. I didn't see her go. But she apparently went into adjacent tree (where XCC was seen earlier). Flor only stays a second. Flies off. Immediately the ♀ Barri flew back into the Erythrina and started to feed again.

So Flor also seem to be dominant over ♀ Barri
Leaving 5:40 p.m.

April 8, 1965
Rd. to La Azulita

Arrive one little patch of forest about 3 km before San Cuchillas ca. 10 a.m. Still quite dark. Quite a bit of fog. Altitude, according to my altimeter 7750 ft.

Again, very little dawn chorus. And what little there is sounds largely sub-oscine. Lots of humming birds.

Quite a lot of birds around, but impossible to see clearly. Vegetation dense, lush, & dark.

Lots of White-bellied Nighthawks. Noisy but alone, as usual 6:30. See single M. cyanocephala. Alone. In second growth tree, 20 ft above ground.

Then see single Tangara. Probably no. VII. Silent and alone. Some minutes later, see what is probably same bird in another area. Still silent & alone.

7:01 am. See single Leucospiza nassou (Blue & Black) feeding in low-sub-edge pasture. Uttering CN's. There may be other birds with it, but I can't see them.

7:12. See single new Basileuterus type (LXXX) in tangles edge pasture. Uttering brief, loud, loud R's.

Then see Blue & Black fly into tall tree. Lands near large flycatcher, but the 2 birds seem to ignore one another.

Then see mixed flock. At least 2 BCBT's, 1 wren or furnariid & BCBT's uttering lots of R's. All in tall trees 30-60 ft above ground. BCBT's \rightarrow wren or furnariid. But then the latter moves on, and the BCBT's apparently do not follow.

Some minutes later, in another area, hear lots of noise. Including BCBT R's. Apparently several species involved. Then a pair of BCBT's flies away from this area. Downhill across road. Noise, including BCBT R's continues uphill. Downhill BCBT's eventually fly back uphill to join the noise. This presumably is BCBT boundary dispute. One pair eventually flies away downhill (again). Uttering lots of R's. Definitely not followed by anything else.

Considering how noisy this dispute is, it is remarkable that it is not attracting individuals of other species.

Leaving this area 7:45.

Arrive new area, past Las Cuchillas 7:57. 7600 ft according to my altimeter. Area of partially cut down forest.

Can hear White-speckled Whitestarts singing Quite Laf-like here.

8:23 A single cyanocephala, all by itself, flies from tree top to tree-top.

8:30. Come across definite mixed flocks. High in tall trees. Includes at least 1 Whitestart, 1 Tanager which may be Labradouren (III), and others (3). Joined by 1 pair T. xanthocephala. Also 1 Thraupis cyanocephala. Group as a whole diffuse and quiet. Uttering CN's. Occasional song phrase by Whitestart.

Leaving this area 9:05 a.m.

Back to first spot 9:15. Everything very quiet.

Ala! See single Rate-throated Whitestart alone. So perhaps the Whitestarts heard earlier this morning were not White-spunked (But there is no doubt that the Parameo La Negra birds are White-spunked).

9:34. See single Cy near pair of tanagers (probably M. cyanocephala) in top of tall tree, 40-50 ft above ground. Cy flies in one direction. Tanagers in the opposite. Then I can hear (vaguely) Cy singing in dist. over. Short, high, then twitters. Can't distinguish intro notes at this distance.

See Rate-throated Whitestart alone again.

See pair of BCBT's in low dense thicket, 2-3 ft above ground.

Uttering "Tuk" Notes. Definitely alone. Fly away with R's.

Leaving 10:00 a.m.

COMMENT: Up til now, it has become more and more obvious that mixed flocks are not really very common here (altho they certainly do occur — and sometimes in specialized form). I will be interested to see what happens tomorrow, when I hope to work above the Teleferico #1 station.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

MORE COMMENT: Possibly the BQ may be another exa

68
mple of the general trend in social behavior exhibited by some
my species. I E it joins flocks in Panama, but not in Veragu
ula

April 9, 1965
Pico de Espino

Working about Telefonico Station #1 (La Montana) Above
area where Glos seen in 1962 7:28 am Clear. Warm. Very quiet

WJ
Hear G type songs in distance (21)

14 7:40. See group 2 Prioniturus feeding low scrub. Probably
lutoviridis. Many Paltas and Howlers. Definitely alone.

Actually, there is a fair amount of bird noise here now. Most
of it undistinguished warbler-like

15 See single Whitethroat (probably late-throat) alone 7:50 (22)

17 Then see pair of cyanocephala (24) Definitely alone. Moving thru
thick scrub, scattered trees, 10-30 ft above ground. Uttering trills
(soft R's, rather high pitched) as "greetings" whenever one joins the
other.

WJ
Working thru area where Albes were common in 1962. Haven't
seen or heard a single one

There are quite a lot of birds moving around in tree tops, but I
haven't been able to see them well enough to identify

16 8:12. See single late-throat alone (25)

20 Then see a couple more single late-throats alone on way up hill.
(Path is very overgrown now, so it is difficult to see much.)

There are lots of Goldfinches around. As usual, noisy, conspicuous,

and sticking by themselves along.

8:40. See single WM Atlapetes alone. Feeding quietly low, very dense, second growth scrub. Definitely alone.

12 A minute later see single ♂ fly from bush to bush, about 20 ft away. Utters one low-pitched R. (probably) after he becomes aware of my presence. Definitely does not approach WM.

24 Then a pair of Yellow-bellied Poecilotrupes flies by, going from tree to tree. Uttering lots of high thin "freet" notes. Very conspicuous, but definitely alone.

8:50. Can't go any further. (D.E. can't reach thickest part of the forest.) Path completely overgrown. Turning back toward the Station #1.

Fog coming in 9:15 a.m.

13 9:30-9:45 See very nice mixed flock. First become aware of a single wren in scrub under trees. Probably same species seen in flock Paramo La Negra. Looks like House wren. Dull brown, supercilious stripe. But uttering lots of rattling bell-like notes which are quite unfamiliar to me. Then see pair WM Atlapetes in second growth scrub about 30 ft away. Very excited. Uttering lots of hard, loud, "Tit" notes. When first seen, the WM's are about 3 ft off the ground. Then they gradually move away from me. Uphill. At same time they gradually mount higher in vegetation. Up successive tangles. Finally reach 30 ft above ground. At the same time, they are gradually joined by more and more birds of other species. First the wren, and a Baileton crus, probably luteoviridis. When moving, Baileton crus very quiet. (Incidentally, the WM's continued their "Tit"s as they mounted. Also began to utter R's as "greetings".) Both the wren and the luteo

26 viridis - typical joined & followed repeatedly. Then the group was joined
by a pair of Bambacterus nigrocrinitatus. The nigrocrinitatus also
joined & followed repeatedly. At least one of the nigrocrinitatus was very
noisy throughout. Uttering lots of rattling songs. Then the group was
27 joined by a PL Atlapetes. At first this bird showed a definite tendency
to follow the nigrocrinitatus particularly closely. Followed repeatedly.
Then tended to follow group as a whole. Repeatedly. Then joined the WM's
!!! This PL was definitely single and quite silent throughout. Finally
30 a single Cy joined the group. Also silent. The WM Atlapetes were definitely
the leaders of the whole group throughout this phase. The Cy only
joined after the WM's had reached the highest point of their ascent in
the group. But all the others joined while the WM's were still low
and followed them up. By the time, the Cy joined, the WM's were beco-
35 ming quiet. The Cy itself was silent throughout. But the nigrocrinitatus
remained noisy. About this time, the group started to break up. The
Cy flew away once, re-joined the group, and then disappeared again. The
40 nigrocrinitatus flew away from the group, re-joined it once, and then
went off in one direction, low in bamboo & other second growth veget-
ation. I lost sight of the wren. This left the 2 WM Atlapetes and the
1 PL Atlapetes all alone 30 ft in a tree. Finally one WM flew off, then
the other. Then the PL followed the WM's (definite). These three birds
flew off in the same direction as the nigrocrinitatus earlier. Following
a course parallel to that of the warblers. About 10 ft away from the
latter. Then trees and tangles. I.E. it looked as if the leadership of the
group might have passed from the WM's to the B. nigrocrinitatus.

Part of this behavior, or the behavior of some of the birds involved,
may have been "molting" Reaction to me. But the whole thing could no

to have been completely mobbing. Too many following and joining reactions. (It must also be significant that I have never been mobbed by many species in the Quito region.)

Note that this group was not joined by Slate-throated Whitestarts (altho there must be plenty around in the neighborhood). Nor by squirrels.

26 Ca. 10:00 a.m. The pair of WM's returns. Utter a few "Tut"s and then disappear. Apparently alone.

It seems quite possible that the WM's were the leaders of the flock this morning simply because they began the mobbing part of the reaction.

30 10:23. Hear a ~~number~~ of songs in distance which might be G. See single Slate-throat alone.

21 See single thrush alone (same species as at Barro Colorado La Negra)

33 10:27. See pair migratorius feeding in tangles 10-20 ft above ground. Possibly same birds seen in flock earlier (still) noisy. Alone.

ADDITION: There also were a lot of hummingbirds with the flock seen earlier. Incl. white throated (or chested) no. 1.

34 10:28. See single G feeding on white berries in tangle of vines only 20 ft away from the pair of migratorius. Method of feeding is not exciting. Sticks lower mandible straight into berry, like a spear. At same time holds top of berry with upper mandible (the hook curves around middle). Then mandibulates rapidly. Apparently extracting pulp and/or juice with tongue. So the lips here are frugivorous too. The bird also utters quite a lot of single "Tut"s. Probably reactions to my presence.

35 Then we undoubtedly by nuzzling while perched exposed in tall tree

378 at least 70 ft above ground. Song intermediate between those of
Quits birds and those of more southern forms. Usually with intro-
notes. Sometimes "Trit trit". Sometimes "Trit trit". But
intros often are followed by high pitched, then, longer notes. Followed
by twitter. Ending "ceyoo". Typical phrase might be
"Trit trit ta sence ta sence ~~~~~ ceyoo" Sometimes
with monultimate R before "ceyoo".

379 10:55. See what looks like Brown-capped Vireo feeding top
tall tree. Quite XC-like, but bill stubber. Also has light edges to
wing feathers.

379 See single cyanocapitata alone

379 See out again 11:10 p.m.

379 11:18. See pair superciliosus alone. Inside thicket. 6" to 2'
above ground. Silent

379 Incidentally, there seem to be absolutely no red or pink flowers
for Diglossas around here now.

379 11:21. See single Albi in low scrub. Alone.

379 See another single cyanocapitata Silent and alone

379 11:46. See a single Glor fly by. Silent and alone. Not quite same
area where Glor seen 1762.

379 11:56 a.m. See pair superciliosus feeding in low, very dense, se-
cond growth scrub. Quite silent, except for a few ALCN's & 1 R when they
first see me. Definitely alone.

379 12:03 p.m. See pair cyanocapitata alone. Top tall tree. (Many of my
records of this species today have been views of the same individual birds.)

379 12:05 p.m. See another mixed flock. Includes at least 1 WM Atta
piles, 1 BCBT, & peculiar thing that looks as if it might be a black and

43 white montane manakin, several flycatchers (different species), 1 ♂ Gold finch (looks like species of Chrysomitris — yellow below, black above with black throat), and one tree-creeper. All following the WM up a tree, 20 → 30 ft above ground. All quiet. Then WM flies over into low thicket. Nothing follows. Then rest of group seems to back up.

44 Some minutes later, a pair of migrocristatus joins them nearby shrubbery. Moderately noisy. Nothing follows.

45 12:20. Come down small group in small tree, 25 ft above ground. One WM Atlapetes, 1 White-spectacled Whitestart (definitely identified). Whitestart making fly-catching flights all around WM, in usual fashion. One Whitestart f → WM. Once WM f → Whitestart. Whitestart silent. WM begins to utter "Tut"s. Obvious alarm because of me. These "Tut"s apparently alert a pair of migrocristatus. They come to expect me. Utter lots of loud, harsh, "Chuck" ALCN's. Then move on. They do not join the WM - Whitestart group. The latter moves up into very tall tree, at least 40 ft above ground and I lose sight of them.

This group is very close to where large group seen earlier this morning. Possibly WM and migrocristatus the same individuals. But the WM seen with flock of flycatchers, goldfinch, etc., almost certainly a different individual.

46 Same WM back first tree a few minutes later. Silent. Definitely alone. Ignores Cy in tree 30 ft away. Cy also silent and alone.
47 12:41. See single ♂ Albi. Silent and alone. Feeding in same tangle of berry-carrying vine as the Cy seen earlier. At least two or three to feed on berries. But apparently unsuccessfully. Can't seem to

all detach berries from stem and move trees to "spear" them. Then lo
 on off their nose. Almost bumps into a perched hummingbird I.
 Apparently inadvertently. Hummer just looks, but the Albi flies off
 at great speed. Apparently scared.

Leaving 12:50 p.m.

COMMENTS:

I. There were two aspects of the social behavior of the
 birds this morning which rather surprised me.

One was the fact that the microcrinites were not nuclear.
 Some of them were avoiding other species most of the time, and also
 did not seem to be attracting other species. Even the birds that
 did join flocks and attract other species did so only once, and
 not for very long.

The other thing was the role of WM Atlapetes in mixed flo
 cks. They were more important and conspicuous than I remember
 them in 1962. But the flocks which they led today were not long-
 sustained.

April 10, 1965
 Pico de Espejo

Walking above Teleferico #1, same place yesterday. Arrive
 me 7:30 a.m.

see pair WM Atlapetes, low in scrub. Alone. Uttering soft
 R's as "greetings". Then they go up into small tree. Fall silent. Then
 they fly off. About 2 minutes later, a single Y appears. Follows WM
 route thru scrub and small tree. Silent and alone. But then it flies off

in a different direction

I suppose that some mixed flocks I see, throughout the Andes may simply be cases of different birds following the same route at the same time.

7:30 am There certainly appear to be some mixed flocks in tops of tall trees here, but I can't identify the birds.

337 Then see a single ♂ Chlorophonia pyrrhopygia - silent. Alone in top bare tree, 35 ft above ground.

344 Then see single Cyanocephalus perched way up on top of another, distant, dead tree. Alone.

Can hear quite a lot of microcrinites rattling songs. 7:45 am Also lots of what may be ly flocks in distance.

346 8:00 am. See a pair of Cyanocephalus apparently alone.

Bright sunlight and everything very dull 8:15.

348 See another Cyanocephalus silent and alone. In low scrub, 3-4 ft above ground, under trees (i.e. it could "join low mixed flocks if it wanted" to).

349 8:27. See pair (♂ & ♀) Chlorophonia pyrrhopygia In same tree as before. Definitely alone.

350 See single PL Altagates apparently alone. On stump in low scrub.

351 Also see single ♂ Algi silent and alone.

352 Then see single microcrinites. Quiet and alone. 30-40 ft from the PL. The two birds apparently paying no attention to one another. Then, approx. 2 minutes later, PL appears only 7-10 ft from the microcrinites. Apparently a case of joining. (Definitely PL ♂ →) But very inconspicuous. Both birds quite silent. PL feeding higher in scrub.

or other warbler. Eventually both birds disappear from my sight. Apparently moving more or less together.

I am beginning to believe that there is a special inter-specific preference involved in the PL - nigrocantatus relationship.

Go on a few feet further and see some nigrocantatus apparently by alone.

Will well! 8:30 a.m. Flush 1 PL Atlapetes and 1 Plush-cap & Finch from same bush. Apparently they had been together. The Plush-cap goes to one bush. Lets egg, silent. The PL goes to another bush 20 ft away. Apparently joins mate. Both utter a lot of CN's or al CN's. Then they fly away. Plush cap remains behind. Hummingbird. Then flies off in opposite direction.

9:13 a.m. See pair of cyanocephala alone in Melastomaceae in tree. 15-25 ft above ground. Feeding on berries. One or less probably both uttering lots of "beet" or "3beet" notes. Every once in a while one of the birds feeds a berry to the other. The receiver goes down into semi-bunched posture (probably with head pointed diagonally upward) and quivers wings when receiving.

9:21. Hear what seem to be by songs with no Intro Notes or only a very, very weak "Int tut".

I wonder why I haven't seen (or heard) any Whitetails today. Are they less active in good weather?

9:45. A single PL flies into tangle at base of tree which contains cyanocephala higher up. But the two species seem to ignore one another. See two White-bellied Flycatchers alone.

Two blue birds, apparently both caps, fly across road together. Followed, a minute or so later, by two nigrocantatus. But the latter

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don't seem to follow very long. When I go on, I find two Cys feeding together in tangle of vines with no microcrinites near by. Come across single W. Atlapetes 10:10. In same area where large flock seen yesterday. It utters lots of AAN's at first, but soon moves on and quiet down.

Swallow see single White-spinkled White-tail alone.

10:13. See single Tangara high in tree top. Definitely alone.

Looks like caladocides except that wings appear to be largely or completely blue green (but I did not get a good view of the bird).

See a single cyanocephala alone. See a single Red Woodpecker alone (same species seen at #2 station, i.e. LXXV).

See another White-spinkled White-tail alone.

10:24. Again see a pair of cyanocephala. Silent and alone.

10:46. See single microcrinites Horn but alone.

Then see single Yellow-belly. Apparently alone. In low scrub.

There are a few tree creeper types around here, but not many.

And surprisingly non-gregarious, in the sense of not associating with other species. This must be significant. Mixed flocks simply are not common here now.

11:00 a.m. Watching single P2 feeding alone in tall trees 30-35 ft above ground. Absolutely nothing shows any tendency to join it.

11:02. See single G alone. Feeding in same place as yesterday. Using more technique. Songs quite a lot in intervals of feeding. Some phrases quite short. E.g. "Trit trit ta neeee ta seeeeyoo". Others like those transcribed yesterday. With "Trit" Intro Notes. But the Intros are relatively soft.

See another cyanocephala alone!

(25)

Leaving 11:15 a.m.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

COMMENT: It is obvious that all the species above

Telefonos #1, with the probable exception of cyanocephala and the possible exception of Cy, are in non-breeding condition now.

It is all the more surprising, therefore, that mixed flocks are not more common now than in September, 1962. Does this suggest that the birds of this region are in process of losing the habit of associating in mixed flocks ??? And that this process begins by reducing the frequency of associations in the non-breeding season ??? (Once the habit of associating has developed, it may be difficult to control in the breeding season, simply because the birds have to be noisy while breeding and noisiness must tend to be "attractive" to other species.)

April 11, 1965

Pico de Espejo

Working above Station #1 again. Arrive 7:20 a.m.

Lots of long tailed, rather purplish blue jays around here both today and yesterday. Apparently have nothing to do with flocks.

7:30. See pair nigrovittatus apparently alone. In low scrub, not under trees. Noisy.

Then a single Glor flies by. Exactly where Glor seen in 1962. Sil ent. Definitely alone. NOD. Feeding in scrub, not covered by trees.

Makes one flycatching flight. Then Cy (s) begins to sing in distance. Glor apparently ignores them.

69 to find single B&B and single Red Woodpecker in same tree.
I.E. the two birds have been moving together in same direction.
(This woodpecker must be the other sex from the one seen on previous days — there is red in its moult.) Then I realize that

There are quite a number of other birds around in the same general area. At least 1 other BCBT (and probably 2), 1 tree-creeper, 1 cyanocephala. There also is a guy singing somewhere nearby. And I catch one glimpse of a PL Atlapetes. Then a glimpse of a WM Atlapetes, 60 ft away from the PL. This seems to be a real mixed flock. But very diffuse and scattered. (Area includes scattered tall & medium sized trees and lots of scrub, both under trees and in the open.) Lots of miscellaneous coming and going. Difficult to tell who is doing what and to whom. But I did the following. Once BCBT definitely followed (probably followed the tree-creeper). Once the Red Woodpecker definitely followed the group. The BCBT's stuck to the trees, ranged from 10 to 40 ft above ground. The woodpecker and tree-creeper also stuck to the trees, probably ranging about same distances from ground. The cyanocephala stuck to the tree-tops 30-40 ft above ground. The WM and PL stuck to the scrub, 5-20 ft above ground. All the birds were quiet or silent except the Cy.

The reason I am sure that this was a mixed flock is that I have panned this area many times before without seeing much in the way of birds. Also, all these particular birds disappeared at more or less the same time. Just sort of drifted off in an inconspicuous manner.

It is important to stress, however, that they never formed a compact group. Scattered anything from 10 to 200 ft away from one

another.

Ag I think that the "nucleus" of this flock was composed of the BCBT's, wood pecker, tree creeper, and cyanocephala. The Ag probably approached and sang only as the group passed through its territory. (It shut up fairly soon as the group drifted on.) The Atlapetes may have come up from very low scrub, where they usually remain hidden, attracted by the sight of the other birds and the sound of the Ag.

43 161 incidentally, about 3 minutes after the last of this group had disappeared, at least one megascylotus appeared in scrub in area where group had been. I imagine it had been there all the time. But remaining silent and hidden. Like the megascylotus at the Paramo de Guasca!!! In any case, it eventually moved on in a direction different from that taken by the flock.

102 7:30 a.m. See single cyanocephala alone. In tree-tops. Near where flock was earlier. Possibly it didn't follow the BCBT-wood pecker-tree creeper assemblage.

104 7:37. See pair of megascylotus alone. Quite noisy.

74 HO 7:45. Stumble across another mixed flock. Includes 2 WM's, 2 megascylotus, 1 spintail, probably others. Quite noisy. Disperses upon my arrival. (The WM's and megascylotus in this group certainly by the same individuals that were in the large flock a couple of days ago.)

83 7:50. Continue along path. Run across pair of WM's. Certainly saw birds seen a few minutes earlier. In tangles and scrub 5-20 ft above ground. Also 1 or 2 Wrens, about 30 ft from WM's. Undoubtedly same species [and same individual(s)] seen in large flock two days ago. Also in tangle 20 ft above ground WM's uttering Al

46 CN's and probably "secret" Notes. Wrens (s) singing loudly and furiously. Then I notice that the pair of magnocephalus is in scrub 20 ft from Wrens, 30 ft from WM's. Then I see 1 or 2 Cyanocephalus in tree tops, 30-40 ft above ground, about 20 ft from both the wrens and the WM. Then I see a Green Toucanet in tree-top just far from WM's. Then Cy. →. There also are some miscellaneous flycatchers around. This seems to be another real but very different mixed flock. All birds disappear more or less same time, except for the magnocephalus which remain behind.

It certainly would appear that magnocephalus does not like mixed flocks, even though it occasionally appears in them.

70 ADDITION: A single thrush was associated, briefly, with the BCBT-woodpecker-tree creeper flock seen earlier. Not the usual rosy species around here. Glossy black, yellow bill, legs, and eye-ring. Probably the species seen in mixed flocks in Colombia.

91 About 5 mins later came another what is probably part of the WM-Toucanet-wren flock. Two Cyanocephalus and one Cy. I know it is the same Cy seen earlier (has light spot on lower mandible). These birds disappear rapidly. About 2 minutes later, a single Green Toucanet passes by. Low in scrub, 17 ft above ground. Going in same direction as Cy and Cyanocephalus!

If Green Toucanets are really members of mixed flocks here, they may be quite different from the Aricari birds.

At the same time the Toucanet passed, there were lots of loud "Tuck" Notes in nearby scrub. Like nothing else I have heard this year. Could they have been uttered by the gray-headed Basilentomus seen in 1962? P.P.P.P.P?

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10. 11. ~~See my report~~ ⁽¹¹⁾ apparently alone
seen in 3 cyanocapitata alone in tree top.

Leaving 11:03 am

COMMENTS:

I. All in all, I don't think that the social behavior of most of the birds here has changed very much since September of 1962. Probably one of the reasons I have seen very few well-integrated, closely-knit, mixed flocks this year is that I have seen very little of the Luteoviridis-types and nothing of the gray-headed Basileuterus. There may be the only two species which "inspire" the formation of close flocks.

II. As far as my observations this year go, they confirm my earlier impression that there are really two types of mixed flocks here: "tree-top" and "bush".

In my final report, I will be able to discuss and compare only the "bush" flocks in detail. I shall ignore the "tree-top" flocks as much as possible.

Of the species observed at some length during this trip, probably only cyanocapitata is a frequent member of "tree-top" flocks. (Of course, it also occurs in "bush" flocks.)

April 12, 1965
Merula

SEE TODAY'S NOTES ON MIXED DIGLOSSINI
(Not Much)

SEE NOTE AT END OF DIGLOSSINI SECTION

August 28, 1965

Rio Esprizo

Above second station area 8.00 a.m. Clear. Sunny. No wind.

Cool. Everything very quiet. (21)

8:10 a.m. See pair Yellow-bellies. Quiet. Defunct along 10 ft up in AS. Fly off immediately.

Then hear quite a lot of thrush sounds down hill. Apparently
Sooty "Alarm" Notes Not Song

Then see a couple of Sooty Terns along 12 ft up in AS

8.21. See single Whitebearded Flycatcher 1 ft up AS edge rock
slide. Quert. Also *Siphnotus* alone

8:26 Just about same level as telephone station. See single floor
Silent and alone 15-25 ft up in relatively tall AS scrub.

NOTE: There are few or no tubular red or pink flowers here now.

But there are melon-like cucurbits with cup-shaped lavender flowers.

9:35 a.m. There really are wonderfully few birds up here at the upper limit AS. (Certainly, this is one of the reasons why there are so few mixed flocks)

There seem to be more birds (goldfinches, etc.) in the Parana itself. (7)

10:03 a.m. About 7 1/2 ft below Teleferico Station See group 4 PL

Atlapetes. 2-3 ft up in low thick AS and blackberry, brambles. Definitely also
a. Very quiet. Just soft "Tut" Notes. Very inconspicuous indeed!

10.14. See single sooty thrush. Silent and alone. 3 ft up AS

Getting cloudy now 10:16 a.m.

10:29. Some slight trace of a mixed flock! 2 Catantopias (bill under
at eye; head gray; some strutting both above and below) and 1 dull-brown
Squallorix-type. Moving together low in sparse scrub edge slide. Silent

Then juncos fly on. Sparrowtail apparently does not follow.

There really is quite a lot of bamboo scrub here - in patches.

11:00. See another single White-headed alone. Quite 10ft up thick patches of AS. Flycatching.

11:15. See another single Sooty Thrush alone. Low in AS. Noisy.

Leaving 12:00 Noon.

COMMENTS:

There undoubtedly were a few more birds around here this morning than I actually saw. I heard occasional "CN"s low in scrub. (Actually, a species of largely Rufous Orethya seemed to be the most common bird throughout the area.)

The vegetation here is rather distinctive. On the whole, scrub is sparse. Possibly some (or much) of it is second growth. But there also are patches of very thick (and sometimes tall) AS scattered about. I think the area looks as if it should be inhabited by more birds than it actually seems to be.

I am confirmed in my impression that this area is very humid (note the continued presence of R's and Yellowbellies). And, going down on the Teleferico, I noticed that the lower vegetation looks very much like the VSF on Murchugue.

August 29, 1965
Paramo La Negra

Going to start work in the usual place here. Arrive 6:02 a.m. Still very dark. Heavy low cloud. Looks like rain is coming. Everything very quiet.

A few minor, miscellaneous bird sounds 6:13 a.m. Then great increase in volume and variety 6:19. There is really a lot of bird noise by 6:25. Including songs by a number of species. Many of the birds here must be in breeding condition now.

6:58. See a single Sooty Thrush alone. 25 ft up in tree. Then see another single Sooty Thrush alone in low second growth scrub.

Then see 2 PL's alone. Obviously disputing. Chasing one another. With "chitters" and R's.

7:03 a.m. See mixed flock - of a sort. In tall trees above pasture. Group includes 3 "luteoviridis-types" in one tree, and a single Coer in another tree, 4 ft away. All birds apparently picking insects off leaves. Ranging 15-25 ft up. Coer silent. luteoviridis-types noisy.

The luteoviridis-types certainly are not same species seen at Agua Bonita in Eastern Cordillera Colombia a few days ago!!! Uttering very different calls. More or less typical Basileuterus Rattles and Floorishers. Not at all slate-throat-like. Also duller in color. Dull yellow (washed with grayish olive) below. Rather broad superciliar areas of the same dull yellow. Generally dull olive above. (Can't tell if crown is noticeably grayer than back or not.) Bill looks slightly large and "coarse". I.E. these birds might be Hemispingus. But they certainly are not very much larger than the Coer.

Then Coer flies off into low scrub 1-3 ft up, across road. The luteoviridis-types certainly do not follow. Eventually, they move off, thru trees, in a quite different direction.

Then, 7:19 a.m., I see a single Inter. First perched 30 ft up in dead tree. Apparently quite alone. About 30 yds from the luteoviridis-types in one direction, at least 50 yds from the PL Atlapetes (still fighting) in

Inter
Cov

the other direction. Both PL's and luteoviridis-types being noisy at the time. Then Inter flies over into the same scrub invited by Cov a few minutes earlier. Also ranges 1-3 ft up.

Inter
Cov

I.2 Cov & Inter ranges or territories certainly overlap here. And the two species almost certainly compete for food. They both pick insects off leaves in the scrub.

Inter

Inter gradually moves up hill. In general direction of PL's. But I think that it does not actually join the latter.

Inter

Inter here may be less highly (or less "tight") Allopagurus here than all or most fittis in other parts of the Andes!!!

Atlapetes still uttering Wattle songs occasionally 7:33. NODWA. See a couple more sooty Thrushes alone. Also a single maroon crested montane cotinga alone.

II
Glar

luteoviridis-types still around. 7:35. In trees and second growth tangles. 15-25 ft up. Still noisy. One individual Begs from another. And is fed. (The Begging individual is duller than the others. Obviously young.) Then single Glar's → luteoviridis types 15 ft up in tangle. Silent. Picks insects off leaves. Then flies off. luteoviridis-types do not follow.

Now I can see that the crowns of the luteoviridis-types are the same color as their backs. Definite. Also, their superciliary stripes are not very broad.

III

At one time, there are a single White-bearded Flycatcher and another flycatcher of another species (gray & crested) in tree only 20 ft or so from the luteoviridis-types ("LT"s). But the flycatchers apparently do not follow the LT's when the latter move on.

(can?)

7:45. Can hear what seem to be Cov songs ("seeee" Intro Note

in distance. NODWA. Then Coer shuts up.

Scam

A few minutes later, I hear what sounds like Scan "Chub" song down hill. Nothing else of interest audible at the time.

Scam
Coer
Glor

Scam trying to come out 7:42 a.m. And now several birds are uttering "Chub" song! Then Coer utters another phrase. Completely overlapped by "Chub" song. Again! Again! Again! Also hear what sound like Scan fighting notes.

A single Glor flies by. Silent and alone.

Glor

7:59. Both Coer and presumed Scams silent now. And I see a single Glor singing. Phrase after phrase. All or most with slight trace of subterminal R. This probably is same individual which sang so much at dawn. (Probably more advanced in breeding cycle than all or most of the other local Glors.) Perched exposed 30 ft up top tall tree. Then flies away and shuts up.

Everything fairly quiet 8:05 a.m.

See a single Whitebeard alone 3 ft up bush in pasture. Then see 2 more individuals same species adjacent scrub. This seems to be a family group. Definitely alone. (The Whitebeard may show as nice geographic variation in Allogygisomys as any species I have observed!!!)

Glor

8:08. Another Glor singing. NODWA

See a single P. alone. On ground in pasture! Silent. Then flies across road into scrub. Then it is joined by its mate. Very noisy Greeting.

Glor

More Glor songs. NODWA

Glor

See a couple more Glors in scrub. Alone. Also another Sooty Thrush. Flying but alone.

Scam has gone again now. And it is getting colder.

See group of Whitebeards (again). (Still) alone.

8:20. See single Cy alone. 30 ft up in tree. Singing. NODWA. All song phrases "Tut tut tawee taweeee ~~no more~~" I think that all or most of the supposed Coer songs I heard earlier this morning (in distance) may well have been Cy songs of this type!!! The "taweeee" notes are quite loud and more penetrating than the other notes.

Cy sings for a long time. NODWA. Certainly in breeding condition. See another Glor silent and alone!

8:31 a.m. See single Yellowbelly. Silent and alone. 2-3 ft up in young second growth scrub.

8:40. More scan-type "Chuk" song. At first NODWA. Then I hear more song by Blue Duglona in distance. This does sound like Coer - but it is too far away for me to be sure. Completely overlapped by "Chuk" song. Then Duglona shuts up. Presumed scan continues.

Scan shuts up. Then I hear more Glor songs. NODWA. Glor shuts up. Then I hear a few White-spectacled flycatchers. NODWA.

See some more Glors and White-heads. Both alone. Also a pair of PL's alone. (All these birds obviously are same individuals seen alone earlier this morning.)

9:00 a.m. See another definite mixed flock. Includes at least 2 White Spectacled, 1 Yellowbelly, 1 cyanocapala. Group quiet but very coherent. Moving rapidly thru scrub and trees. All birds ranging 3-20 ft up. White-spectacled in lead; followed by Yellowbelly; followed by cyanocapala.

At one time, a juv. Coer was seen only a few feet from the group. I think that it may have joined and/or followed the group!!! At various times, group also passes near 1 Glor, 2 White-heads, and 2 maroon-crested cotingas. But I am sure that none of these latter species follows.

or joins.

But then the situation becomes confusing.

I follow side path, uphill from road, in direction in which White-spectacled-Yellowbelly-cyanocephalus group went. And I come across what is probably part of same group within a couple of hundred yards. In second growth woods. See 2 White-spectacleds, 1 juv. lg (see !), several woodcreepers and 1 or more humming birds, all close together, 15-20 ft up in trees. Group as a whole quiet, except for occasional White-spectacled song phrase (NODWA). Not making any progress in any particular direction.

From sounds, I imagine that there is (are) also 1 or more White-heads quite close to this group; but I can't see them.

Then I hear more bird sounds about 30 ft away. I approach the up, and find another "cluster" of birds. Including 4 P's, 1 Yellowbelly, 1 White-spectacled, 1 wren. All 2-6 ft up in second growth scrub under second growth trees. When the P's see me, they begin to mob. Becoming really very noisy indeed.

At this point, the White-spectacled and the Yellowbelly of this "second cluster" abruptly disappeared. I.E. they seemed to have gone off together (viz the Yellowface - Yellowbelly annotations on Previous). But a number of other birds joined —> group of P's and wren, presumably attracted by P's Mobbing. The joiners included 1 adult lg (!), 1 Whitehead, and 1 woodcreeper. These joiners may have come from the adjacent "first cluster" !!!

Then all birds drift off. I can't tell who, if anyone, is in lead. I don't know whether these 2 "clusters" should be considered separate flocks or two parts of a single flock. If the latter, then the flock as a

(40)

whole was quite diffuse - in much the same way as some of the flocks seen near the Telford #1 Station a couple of months ago.

Everything quiet now 9:50 a.m.

10:00 a.m. A few yards down hill. Come across some of the same birds. 2 White-spectacled, 1 adult and 1 juv. Coer (!!!), 1 White-headed. All quite close together. 10-20 ft up in trees. Quiet.

The 2 Coers are feeding on fruit. Also picking insects off leaves. White-spectacled and White-headed flycatching.

The 2 Coers undoubtedly are the adult & juv. seen together early this morning. Also undoubtedly the two birds seen separately with different "clusters" only a few minutes ago. I.E. probably all the birds seen at various times in this particular site should be considered permanent or temporary members of the same diffuse flock (of fluctuating composition.)

NOTE: The White-spectacled Whiteheads here have narrow spectacles and rufous crowns.

NOTE: The altitude of the road here according to my altimeter now is 8550 ft.

10:15 a.m. Glens still hanging down by road. NODWA.

Leaving 10:20 a.m.

COMMENT: In general, my observations of today and yesterday would seem to confirm my earlier impressions of the behavior of the birds of this region. They certainly are Allogregarious to some extent, but apparently much less so than the birds of the Western and Central Cordilleras of Colombia.

If the birds here should turn out to be significantly more Allogregarious than those of the Eastern Cordillera Colombia, this would indicate that the "frontier effect" is more important than "accessibility to inland

(41)

hopping". If they should turn out to be significantly less *Allogregarius*
s, it would indicate that "accessibility to island hopping" is more im-
portant than the "frontier effect".

August 30, 1968
Paramo La Negra

Going to work in same region again this morning. Arrive 5:32
a.m. Still completely dark. Sky appears to be largely clear.

glor Bird sounds beginning around 6:10 a.m. First *glor* songs 6:14.
Quite a lot of *glor* songs in the next few minutes. Sometimes overlapping
g songs by adjacent Andean Sparrows, but more often alternating with
them! NODWA

glor Most of the *glor* songs have little or nothing in the way of R com-
ponents.

Quite a lot of bird sounds by 6:25 a.m. Going uphill along side
path I followed yesterday.

glor *glors* silent 6:27. Then hear first *Atlapetes* Whistle songs. NO
DWA. But overlapping many other bird sounds apparently at random.

The chronological order in which different species sing here (and
probably every where else) seems to be quite fixed.

glor 8850 ft Ca. 6:40 - 6:45. See a couple of Sooty Thrushes. Also 1
White bird. Also 1 Blue *Diglossa* (Cy?). All apparently alone. 15-20 ft
up in trees.

glor *Atlapetes* still singing NODWA. 6:45.

glor Then see Blue *Diglossa* again. Obviously same individual seen a
few minutes earlier. But I see now that it definitely is *Coer*. Silent. Still alo

me. Feeding on small tubular orange red flowers. Apparently sticking bill down center of tubular corollas.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

8:03 a.m. See group 3 lutiviridis-types. Probably same family group seen yesterday. (Altho they look brighter yellow in sunlight) 20 ft up in second growth trees. Noisy. But definitely alone.

8:23 a.m. Same general area. See some sort of mixed flock. 2 PL's 1 ft up in second growth AS. Noisy. Uttering "seeet"s. There also is a pair of White-spectacleds in small trees above PL's. 6-10 ft up. Silent. Then the White-spectacleds fly away into trees 30 ft away. PL's apparently do not follow. (Note: A Coer appeared in trees not too far away from these other birds at approximately the same time. Possibly they have all been associating with one another.)

When I approach the PL's a little more closely. See that there really are 3 individuals here. Still very noisy. But definitely alone now. And one individual seems to be picking up nym!

8:00 ft 8:50 a.m. See single GLR alone in second growth AS.

Starting downhill again 8:55 a.m.

Back to area where PL's were seen earlier. They are still here. But now there certainly are also some other birds in area. At least 2 B. nigrocrinitatus, 2-5 ft up in scrub. And I can hear some Woodcreeper or near by. Flock as a whole moderately noisy, but diffuse.

(My observations this morning also would suggest that flocks here may be "transitory". E.g. various things seem to have joined up with the PL's here at different times.)

NOTE: This flock was first seen at 9:30 a.m. (I.e. the 2 associations with the local PL's may be counted as 2 different flocks.)

9:50 a.m. Not far from road. Where mixed flock seen yesterday. See quite a large flock. Probably largely same as one of the "clusters" seen yesterday, but not the same as any of the flocks seen earlier today. Includes 2 Whitestarts, 1 Whitehead, 1 adult Coer & 1 juv. Coer, in trees 10-20 ft up. (Coers obviously same birds seen with group yesterday. I.E. they are regular members of group.) Also 4 or 5 PL's (one of which is a Begging juv.) and 1 wren low in scrub 1-8 ft up. Group moderately noisy and moderately coherent. Coers, Whitestarts, and PL's each in lead at different times. (Incidentally, the Whitestarts are Whitespuckled, of course.)
 NOTE. This flock certainly does not appear to be "transitory".
 Leaving 10:20 a.m.

August 31, 1963
 Rio Espejo

Working from #2 station. Reach station 7:50 a.m. Go down a path I have not visited since 1962. Arrive 10,300 ft 8:00 a.m. Upper limit 15,000 ft. Weather clear and cool. Little wind.

See single Sooty Thrush alone. Flying across Paramo. Everything very quiet.

8:20 See 3 or 4 Sooty Thrushes in group in AS. Alone. See an Ochetoceros alone. Local Ochetoceros is dull brown, with uniform breast and belly, supercilious, and wing stripe. Silent & alone (This is species which also occurs at Paramo La Negra - sometimes in vicinity of mixed flocks.)

8:42. See pair Whiteheads 3 ft up. AS. Alone.

8:50. 10,000 ft. Come across definite mixed flock. Region where mixed

40
H
I

10 meters low AS are scattering through Paramo. Group includes 5 or 6 Luteoviridis-types and 3 woodcreepers. Woodcreepers f ———→ Luteoviridis-types repeatedly. Group very coherent. Luteoviridis-types going from patch of scrub to patch of scrub. Ranging from ground level to 4 ft up. Uttering lots of "CN"s. Woodcreepers ranging 2-6 ft up. Silent. Luteoviridis-types undoubtedly same species seen La Negra. Fairly dull. Bill looks Parus-like close-up. Woodcreepers fairly small. Spotted or scaled underneath.

9:18 am 9650 ft See another group 3-4 sooty Thrushes alone in AS. Further down path, see what looks like Hummingbird VIII feeding on pink flowers. Silent and alone.

9:33 9475 ft. See another mixed flock. Group of at least 3-4 Luteoviridis-types and 1 woodcreeper. Same species seen together earlier. Ranging 3-4 ft up thru AS. Woodcreeper silent. Luteoviridis-types very noisy. Harsh Begonia notes as well as "CN"s. Woodcreeper probably f ———→ warbler. Luteoviridis-types would seem to be Parus Nuclear in the "claw" sense of the term!!!

Then see group 2 PL's & 1 Whitebeard. About 20 ft "behind" the Luteoviridis-woodcreeper group. But apparently going in opposite direction. PL's uttering lots of "Greetings". 2 ft up in AS. Whitebeard ranging 2-6 ft up. Whitebeard f ———→ PL's.

Then I hear Whitespotted in AS across ravine. NODWA

9:55 am. 9350 ft. Just above first patch VSF. See pair PL's 3 ft up in AS. Noisy but alone.

See single sooty Thrush alone 20 ft up in tall tree further down path. Also alone.

Then hear what may be Dubusia song down hill.

10:02. See single maroon crested montane cotinga alone in VSF trees. Then see single Grey Flycatcher! Alone. Silent.

Cor 14
H 40
20

10:12 9370 ft. Fifth glaucous mixed flock in trees of VSF. Probably includes at least 4 or 5 birds. But all I can identify are 2 White-eyed cillids and 1 Tette. 20-30 ft up. Group noisy, but diffuse.

Ant 20
H 20
IV

Group then moves up hill into adjacent AS. I now realize that it includes 2 Tettes. Peeling insects off leaves. Also at least 2 Luteoviridis types, c-10 ft up in scrub near trees. It sounds as if group also includes some PL's. I can hear Atlapetes-like "freet" Notes.

Flocks really are quite common in this area now!

Group joins them area in which maroon-crested cotinga is perched. And the latter flies away immediately. Apparently nothing follows.

Group as a whole is quiet now, 10:30 a.m., and still very diffuse. I am going to start back up hill toward Station #2.

On way back, see several more single sooty thrushes alone. Also hear more Whitestart song NODWA.

H 40
H 40

9600 ft. See a pair of Oreothraupis alone.

Glor 25

11:05 9600 ft. Region where AS is low but particularly thick. See group of 2 Yellowbellies and 1 Glor. 2 ft up. Yellowbellies noisy. Yellowbellies f —> Glor!

Clouds starting to come down 11:16 a.m.

11:35 10,075 ft. Fog starting to come in.

11:43 10,150 ft. See pair White-blended alone. 3-6 ft up in AS.

Stopping observation 12:10 p.m.

COMMENT: The fauna here certainly seems impoverished — as compared with any of the Cordilleras of Colombia. Is this characteristic of the Tumbucuan Andes as a whole ???

In any case, it is (further) evidence that mixed flocks are not necessarily highly developed where the number of species is least (i.e. where competition between species might be expected to be least intense).

NOTE: According to my altimeter now, the altitude at the station here now is 10,050 ft. According to the guide book, it is 3452 m. Comparison of these figures will tell me if my altimeter is working properly.

September 1, 1965
Pico Espejo

Going to work from station #1 this morning. Arrive 7:20 a.m. Working along usual path uphill. Weather is fine. There still is some "general" bird noise. But no songs.

Path has been cleared since April.

7:26 a.m. Not far from station. See single Red-tailed Squirrel apparently alone. 25 ft up trunk tall VSF tree.

7:32. Some distance further on. Area low second growth scrub. See mixed flock. Includes 2 WM Altapetes, 1 Synallaxis, 1 other bird. 3-4 ft up. WM's fairly noisy. All birds close together. Then WM's fly down hill into scrub where I can hear B. nigrocapitata. This probably should be classified as joining! Synallaxis f. → WM.

7:58. Some distance further along, see another squirrel apparently alone. Probably same species.

Now going way along path uphill. Where I went in 1962 (but not last April). Everything very quiet.

8:21. 7990 ft. Edge VSF and bamboo scrub. See single Yellow-belly. 10-25 ft up in small trees and tangles. Noisy. But definitely alone.

But then the Yellowbelly flies up hill into VSF And I hear other birds moving in that direction.

8:29. A little further up hill. See pair cyanocephala 40 ft up in tall VSF. Definitely alone.

8:35 a.m. 8025 ft. Region of very mixed second growth adjacent to large patch bamboo scrub. See another mixed flock. Includes 2 Plush-capped Finches and 1 other bird (unidentified, but generally yellow olive). 3 ft up. Silent. All birds close together. 1st Alb "Exorts" the group briefly, but then disappears. Group going down hill slowly. Then I hear Atlapetes "Greetings" in scrub 15 ft up hill. Then 2 WM's appear. WM's f —————> Plush-capped group. Then 2 B. nigroviridatus appear, about 10 ft behind WM's. B. nigroviridatus f —————> group. Then turn "sideways" and go thru bamboo scrub, 1-3 ft up. They apparently have abandoned group.

Then 3 cyanocephalas appear from down hill cyanocephalas f —————> B. nigroviridatus. Land in trees 10-15 ft up, right above the warblers. But then the warblers move. And cyanocephalas do not follow.

I think that these birds must be considered to form (or have formed) two different flocks. Both diffuse, on the whole. cyanocephalas noisy throughout. Lots of twitters. WM's and B. nigroviridatus utter a variety of sounds, but are quiet most of the time.

8:50. Same area. Single Yellowbelly f —————> cyanocephala. A third "flock" here! Lands in tree 15 ft up, about 15 ft from the nearest cyanocephala individual. Silent.

Then all birds disappear from view. I think the cyanocephalas & Yellowbelly went in the same general direction as the B. nigroviridatus earlier.

8:56. Then the WM's reappear! Obviously same individuals seen earlier. 3 ft up in bamboo scrub. Apparently following B. myzocritatus and/or cyanocephala - Yellow-bellied "cluster" !!!

Then ♂ Alb "escorts" WM's briefly. Disappears

Then some sort of largely or completely rufous synallaxis-type f.

→ WM's. Quite close. 1 ft up in bamboo scrub.

So all the birds here would appear to be continuous or intermittent members of one, very diffuse, flock !!! Apparently with changing leadership.

Going further up hill 9:00 a.m. (a)

9:11. 8060 ft. See single Yellowbelly 15 ft up in second growth tree above scrub. Apparently alone. But this may be same individual seen earlier, and there may be other birds around in the neighborhood.

9:36 a.m. 8140 ft. Region mixed second growth. See another mixed flock. Includes at least 2 White-spectacled, 2 BCBT's, 1 B. myzocritatus. Quiet. And diffuse. But all the birds are going in same direction and there seems to be a definite order of precedence. White-spectacled in lead. Followed by BCBT's. Followed (at least for a while) by B. myzocritatus. BCBT's + myzocritatus 3-6 ft up in scrub. White-spectacled 6-10 ft up scrub and small trees.

It is beginning to look as if most of the birds here now are gathered into flocks !!!

Perhaps the allogregarious behavior of the birds of this region, in general, is intermediate between that of the birds of the Eastern Cordillera of Colombia, on the one hand, and that of the birds of the Central and Western Cordilleras on the other hand.

9:53. Some yards down path. Hear lots of White-spectacled song. NODWA. Then see singing bird. 10 ft up in small second growth tree. Probably one of the birds with flock seen a few minutes earlier. And I can

hear other birds in nearby scrub. Apparently (still) following the White-spectacled

10:00 - 10:35 a.m. 8200 - 8250 ft. See another mixed flock in region of very mixed vegetation. All sorts of second growth and mature ISF. Flock as a whole is enormous. Has a definite "nucleus" in lead. This nucleus includes at least the following: 12-4 Luteoviridis-types (probably same species seen up hill yesterday), 1 Basileuterus coronatus (probably), 1 Hemispinus superciliosus ruyi (see brood gray crown), 1 Cyanocephalus a, 1 White-spectacled, 1 White-headed, 1 Empidonax-type flycatcher, 1 woodcreeper (same species seen with Luteoviridis-types yesterday), 1 Green Tanager (me!) - apparently same species as in Panama - and 1 Piculus rubiginosus (identification definite). This nucleus is very, very coherent. All birds sticking close together. And all moving in same general direction very rapidly. (The Tanager certainly is an integral member of the group.) All or most birds ranging 10-35 ft up. Leadership obviously changing. White-spectacled, woodcreeper, Cyanocephalus, and one or (more probably) more species of Basileuterus and/or Hemispinus in lead at different times. All species except Cyanocephalus, Piculus, and Empidonax-type vocalize frequently. Flock as a whole very noisy!!!

There was some fighting among the White-spectacled. With elaborate display postures. Possibly flock included 4 White-spectacled at one time. And/or joined from territory of one (breeding) pair of White-spectacled into that of another pair - thus provoking a boundary dispute. (See also below.)

When flock was first seen, there was (were) 1 or 2 PL Atlapetes in scrub 20 ft "behind" it. I don't know if the PL's followed the nucleus or not. (But they certainly must be considered at least temporary members of the flock.)

also 2 BCBT's!

At the same time, I saw a pair of B. nigrocrinitatus in scrub 20-25 ft "behind" the PL's. Very noisy. Again, I don't know if these birds followed nucleus or not. Possibly 2 pairs of B. nigrocrinitatus "emerged" as flock passed by different areas. At least, I saw (another) pair of nigrocrinitatus in miscellaneous scrub, under the other birds, much later on, when flock had passed far away from where nigrocrinitatus was first seen. These (later) nigrocrinitatus (also) very noisy. Lots of Potties and Floweries.

Also, when flock was first seen, there were 1 Blue & Black (!) and 1 Yellowbelly, 20 ft apart, 20-30 yds "behind" the nigrocrinitatus. Both 30 ft up in VSF trees. These may be considered "outliers" of the flock.

Thus, the flock included "diffusely scattered satellites" or "followers" in addition to the very coherent nucleus.

Group as a whole could be described as a "mixed Psittacus or Heimspugus flock."

In its general size and coherence (altho not in its specific composition) it resembled flocks of the Eastern and Western Cordilleras.

Certainly, there were no Diglossa or Conurostrum with this particular flock. Does WCC occur in Sierra de Merida ??? If not, why not ??? The environment would appear to be perfect for it!

Reach highest point of path (where it enters VSF) 11:08 a.m. Cloud is coming up now — and fog is coming down.

11:20 a.m. Some distance further along. Hear a lot of what sounds like White-throated Song. NODWA. (It is just barely possible that these are short Lf songs, but I doubt it.) Sept. 3, 1965

11:31 a.m. 8260 ft See single B. nigrocrinitatus. Silent and alone 1 ft up in second growth scrub along ravine.

11:42. Some yards further on and uphill. (Again?) See single

nigrocristatus silent and alone 6" up in similar environment.

Starting back toward station 11:45 a.m.

11:55 a.m. Back where presumed White spotted birds heard at 11:20. Bird(s) still singing. Still NODWA. (I would not be prepared to guarantee that there are not Laps! If they are Laps, it is interesting to "find" them in an environment which is "typical" of Albr — or the region on the east of Parau where Albr & Lap overlap.)

12:08 p.m. 8280 ft. Catbird glump Albr (can't tell if ♂ or ♀) in patch bamboo scrub in VSF Alters R's. NODWA

Then, 50 yds away, get very poor glumpes quite a large mixed flock. This is near where very large mixed flock seen earlier this morning. Probably largely same group. Probably at least 20 inds in group now. Mostly high, 30-40 ft up in tree-tops. Group certainly includes 2 large surface wood creepers which it did not include earlier.

Can hear White-spotted with group 12:21.

And now I see that there also are birds in bamboo scrub below tall trees. But remaining very well hidden!

Now I see that tree-top group also includes small woodcreepers & can with group earlier

Then I flush single B. nigrocristatus from bamboo scrub near flock. I don't think that this bird really is with group.

Flock as a whole still very coherent. And almost as noisy as before.

12:29. A little further along, 2 B. nigrocristatus s —> group up. Low in mixed scrub.

I am going on down hill because this group is in such a position now that it is impossible to study.

12:38 p.m. Approximately same altitude. Fog is beginning to reach this area. Everything very quiet.

NOTE: There seem to be remarkably few hummingbirds here now. Presumably because flowerings are scarce.

12:47. 8160 ft. See pair of Yellowbellies. 18 ft up in second growth trees. Noisy. But definitely alone. (Yellowbelly behavior seems essentially the same in all regions!)

Light rain starting 12:55.

1:10 p.m. Just below 7900 ft. See another mixed flock. Includes at least 1 Yellowbelly, 2 BCBT's, 1 PL Atlapetes, 2 flycatchers of different species, 2 large (and largely green) parrots. All in trees 15-30 ft up. Fairly close together but rather quiet. Parrots fly off, but nothing follows.

Rain stopping 1:17 p.m. Then starts again.

1:22. Same place. Same group. Group really is quite large. Also includes at least 1 Blue & Black and 1 *Tangara nigroviridis*. Also in trees. Group as a whole still coherent. But not going anywhere. And apparently without definite leadership.

Then I have to move on 1:25 p.m. Rain very heavy.

Back to station 1:30 p.m.

COMMENT: The fog and rain today didn't have any very noticeable effect on Allogregariousness. Neither obviously stimulating nor obviously depressing.

MORE COMMENTS:

There seems to be greater seasonal variation in Allogregariousness here than in all or most of the other regions in which I have worked. Why? Is this characteristic of "intermediate" regions???

There are relatively few brightly colored gregarious tanagers here, and relatively many olive-yellow birds of the *Bantherus* - *Hemiprocne* - *Chlorospingus* type. Why? Why are such species as the GT and the Big Butorapies apparently absent? The answer

onment looks ideal for them (also).

I think that this is supposed to be the dry season here now. But it certainly has been wet (in the afternoons) in actual fact.

September 2, 1965
Parícuto La Negra

Going to work in usual area here this morning. Arrive 5:55 a.m. Still quite dark. Sky largely cloudy. Looks like rain may be coming. (There may be a very fine drizzle already.)

6:38. Going uphill along side path. See group 4 PL's moving on ground, and up to 3 ft up, edge of path. Uttering lots of "PN"s. Can also hear luteoviridis-types in scrub 10-15 ft away. But the association between the 2 species appears to be "coincidental".

6:52 Further uphill. See single luteoviridis-type. 3-6 ft up in scrub. Very noisy. But definitely alone.

7:06. See 2 B. nigrocrinitatus alone in second growth trees. 6-15 ft up. One adult, one juv. Juv. Begs repeatedly (with silent "Wug-Q"). Adult feeds juv. repeatedly.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

8:45. Area where I have been watching Diglossas and humming birds. See group 3 luteoviridis-types. Presumably individuals seen around here before. Very noisy as usual. 15 ft up in second growth trees. I can also hear White-spectacled Song in neighborhood. And 15 ft "behind" the luteoviridis-types is a single moderately small woodcreeper. Also 15 ft up in second growth trees. Silent. This is exactly same species seen with luteoviridis-types on Pico Espejo!

II. II f —————> luteoviridis-types.

Obviously, II has a special inter-specific preference for luteo-

viridis types. Quite as consistent a preference as I have ever seen!

Young clown bill 9:02 a.m.

9:07. A few yards down hill. See single hummingbird (new species - green with buffy throat) coming in m. to nest site. Also defending area against me. So perhaps all the nectarivorous birds here are in breeding condition now.

Then see single sooty Thrush alone 12 ft up in trees.

A few yards further down, see single "purple" Jay. Young but apparently alone 5 ft up in fairly tall second growth scrub.

9:25 a.m. Down by road. See single PL. Silent and alone 6" in blackberry, bramble edge pasture.

Then hear some more Glos songs. NODWAH.

Then see group 3 PL's and 2 Glos low in scrub edge pasture 1-3 ft up. All birds close together. But silent. PL's apparently picking insects off leaves. Glos feeding *Passiflora* flowers in usual way. Glos fly away. PL's do not follow.

9:48 More Scan song in distance. NODWAH

See another single Glos fly by, silent and alone.

Will! Will! See single *Pipridica*, silent & alone 20 ft up in tall tree. Flies off immediately.

10:03 See single Yellow-belly Quail. Definitely alone. Going from tree to tree edge pasture. 5-20 ft up.

Leaving 10:05 a.m.

September 3, 1965
Paramo Zumbador

Reach San Cristobal this morning. Going to look for the Par

La Zumbador this afternoon

Arrive site on road to Queniquea 8470 ft 2:40 pm. Mixed
sunshine & cloud. Fog level is not far above us.

This is area mixed scrub and VSF. Scrub obviously second grow-
th. Looks quite humid.

Near Dubuma song down hill 2:46. Quite typical. *W/H*

2 *3* *10* *18*
cy *Inter*
Then see very large mixed flock. Includes at least 2 Yellowbellies,
1 lutecoides-type (apparently same species as on Pico Espino and La Neg-
ra), 3 "gray capped"s (see below), (almost certainly) 1 Dubuya (prob-
ably sage bird heard singing a few minutes ago), 3 Inters, 1 Cy (defi-
nite), 2 PL Atlapetes, 2 White-spectacled, 3 White-bearded Nycateters,
and at least 1 fundulid. Group moving thru very mixed scrub, includ-
ing some very young, some bamboo, and some fairly mature second grow-
th. Also "pines by" some mature VSF trees at one point. At first group
is moving along both sides of road; then the birds of one side cross over
and join the others.

Group as a whole quite coherent. Birds quite close together. And
moving steadily in one direction. But generally quiet. Only "ca"s.

cy *Inter*
When group was partly divided, by road, the White-beards
definitely were the leaders on one side. Cy f —————> White beards repeated-
ly. Inters f —————> White beards repeatedly. Yellowbellies f
—————> White beards repeatedly!!! Leadership on the other side was more
difficult to observe. Probably provided by PL's and White-spectacled in
alternation.

Most of the birds spent all their time in scrub. Ranging 1-6 ft
up. But the White-spectacled, Whitebeards, and the lutecoides-type
also made "side visits" to the VSF trees. White-spectacled going up to
30-35 ft up. The other 2 species up to 20-25 ft up.

cy
Cy was seen only very low, 6" - 3' up!

cy
Inters

Altho the Cy and the Inters were on the same side of the road when the group was divided, they did not seem to be associating particularly closely with one another. Cy eating berries. Inters taking insects off leaves.

19

At one time, there was a single Sooty Thrush right in the middle of the flock. But it apparently did not stay with group.

This certainly was another flock reminiscent of the Central and Western Cordillera's!!! Are large coherent flocks found everywhere, throughout the Andes, where there is VSF-type forest at relatively low elevations???

Perhaps flocks are particularly well developed here because this area is particularly close to the border of the Sierra de Merida???

NOTE: The "gray cap"s are a puzzle. Obviously Bailetharus or Neospingus. Clean gray (almost blue gray) on crown. Conspicuous dark streak thru crown. Otherwise yellow below, yellow-olive above. I have certainly called such birds H. superciliosus reyei before. But are they? They certainly do not have any visible white supercilium y!!!

Rain starts 3:10 pm. Stops again 3:27.

Inters

3:38 pm. Some considerable distance along road. 8600 ft. See other mixed flock. In scrub edge obviously mature VSF. Group includes 3 Inters, 1 luteovirens-type (apparently dual species), 1 PL, 2 Whitebeards. Group very coherent. All ranging 6"-3' up! All uttering CN's, but nothing else. Whitebeards and Tittis alternating in lead.

cuticolor

Couacoutrium uticolor certainly does appear to be primarily a bird of scrub!

Going back along road a few minutes later, I can hear both flocks approximately where I left them.

Then go on to another area 8975 ft. Edge fog level. Arrive 4:15 pm.

Don't hear or see anything like a mixed flock. The tendency to form mixed flocks seems to fall off rapidly with altitude in the Sierra de Miranda.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

Leaving 5:02 p.m. Rain getting worse.

September 4, 1965
Paramo Zumbador

Going to work same area where Laps were heard yesterday. Arrive 5:45 a.m. Pitch black. Fog. Cold. Also windy!

First (mixed) bird sounds heard 6:16 a.m.

6:53. See pair of B. nigrocrinitatus, 4-10 ft up in thick vegetation. (USF-AS) Very noisy. Lots of Rattle-Howlers. But definitely a lone.

30 Then nigrocrinitatus move on, about 30 ft. And then a pair of Whitebeards appears where warblers were earlier. Apparently, Whitebeards f ———→ nigrocrinitatus. (I can also hear a variety of other birds in the general neighborhood, but I can't place them definitely.)

It looks as if a large mixed flock may be in process of formation here. Then Whitebeards move on past nigrocrinitatus. And nigrocrinitatus f ———→ Whitebeards. Then 2 Laps (described elsewhere) f ———→ group. Presumably "mating".

SEE TODAY'S NOTES ON MIXED DIGLOSSINI!!!

8:31 a.m. Go about 100 yds downhill. Area similar vegetation. And I come across what seems to be an entirely different mixed flock.

Very large, including approximately 20 birds. At least 2 Inters, 1 Whitebeard, 1 Howler-type (usual species), 1 woodpecker II, 1 Lap, 2 or 3 Little Striped Flycatchers, 2 Whitebeards, 1 Empidonax-type flycatcher, other

46 V/11

Laf
Inter

Group very coherent. Moving rapidly up hill. Moderately noisy. Birds ranging ca-20 ft up in (USF - AS) edge grassy pasture-like clearing. Little Striped Flycatchers (again) definitely in lead throughout. Usually followed by White-birds and then the others. Laf definitely in rear most of the time. Sing occasionally NODWAH. The Laf and the Inter definitely do not tend to associate particularly closely with one another.

This flock goes uphill until it reaches an area where the other large flock was seen earlier this morning. Then it apparently turns and disappears. I.E. the ranges of these 2 flocks seem to be partly, but only slightly, overlapping.

I-10
Laf
Inter

Then go up to road. See flock 7:15 a.m. Apparently a third flock (altho just conceivably some of the birds in it also were included in the second flock.) Group very large. Includes at least 2 luteoviridis-types, 1 gray cap, 1 Inter, 3 PL's, 2 III finches, 2 woodcreepers, 1 II, 2 White-birds, 1 Empidonax-type, others.

All birds moving steadily in same direction. But scattered over a very wide area. Some birds frequently 20-30 yds away from nearest individuals of other species. White-birds, luteoviridis-types, Gray cap, and II's near front. PL's and III's at rear.

PL's and III's definitely tending to associate closely with one another. Both species ranging from ground to 2' up, in low second growth scrub at very edge of road.

All other species in smallish trees 5-25 ft up.

The luteoviridis-types and the III woodcreepers show a definite tendency to associate particularly closely with one another.

LCH
Inter

A single LCH visits flock briefly. And it attacks and chases the Inter !!! (altho Inter certainly is taking insects off leaves - not feeding on flowers.)

66 Flock as a whole is quiet. But, I hear both Cy and Coer singing at different times, in general vicinity. Both NODWAH. The 2 birds probably are not close together. Coer heard only toward rear of flock (app. roosting) some place where Coer heard yesterday afternoon. Cy heard only toward front of flock. Apparently neither was near Inter.

67 A single footy Whisk was in center of flock for some seconds, but I don't know if it continued to associate with group or not.

NOTE: This is yet another area where White-spunked Whistlers apparently do not reach high altitudes.

Inter 68 9:52 Catch up with same flock a little further down road. Cent. and includes at least 2 Inters.

Leaving 10:00 a.m., as rain starts again.

REMARKS:

I. Altho the flocking behavior seen this morning was very reminiscent of the Western and Central Cordilleras of Colombia, I am still not convinced that Allogregarioides is generally as highly developed here as in the latter two regions.

II. Certainly the flocks on Pico Espejo and Paramo La Negra differ from those of the Western & Central Cordilleras in form. I.E. they are smaller, on the average. They also may tend to be less coherent and/or quieter. Especially in the non-breeding season (April).

III. Altho flocks such as those seen this morning are similar to those of the Western and Central Cordilleras in form, such flocks seem to be absolutely confined to regions of very extreme humidity in this region. I am sure that I have seen equally extreme flocks in regions of lower humidity in parts of the Central and Western Cordilleras (e.g. parts of Purace).

IV. But I am beginning to come to the conclusion that the "frontier effect", everywhere, may be primarily an adaptation to hum.

idity. (An indirect adaptation — primarily a means of surviving in dense vegetation. Especially forests.)

September 5, 1965
Paraná Zumbador

Going to work in the same area again this morning. Arrive 6:07 a.m. Just getting light. This is just within lower limit fog level this morning. Cool. Little wind.

First few miscellaneous bird sounds ca 6:12 a.m.

Feb
Open

Then Laps begin to sing vigorously (described elsewhere). But there is very little, or nothing, in the way of early bird song. I.E. most of the species here (apart from Diglossas) probably are not in breeding condition.

4
Feb
172

6:44. Hear migratorius Rattles and Floorishes approximately same place where species first seen yesterday morning. Low in AS. Then 6:52 a.m., pair P2 appears 50 ft ~~slightly~~ ^{up} hill. After low in scrub. Uttering occasional "Greetings". Moving gradually uphill in direction of migratorius. I.E. it looks as if flock is forming.

It would appear that the migratorius form the "original" nucleus of the "first" mixed flock here.

Fog lifting 6:58 a.m.

Feb
173

Laps stop singing 6:59 a.m. And immediately single C appears in area. Sings repeatedly NODWAH. But overlapping migratorius Rattles and Floorishes at random. Singing from several perches in different trees 15-25 ft up.

174

At same time, at least 1 White beard and 2 Little striped Flycatchers appear in same general area. 6-15 ft up.

175

All 3 species congregate near P2's. Then the migratorius, who

are about 20-30 ft away at the time, fly over to j → PL - Wh
steered - Little striped - Cy group. Flock is "crystallizing" rapidly.
Cy continues to sing vigorously. All phrases rapid Twitterers pre-
ceded by 4 "Int" Intro Notes. And all NODWAH.

PL j → Little striped Flycatcher

17 17:20. Flock birds still around. But rather quiet and inconspicuous. Group apparently not very coherent now. Then I see single eye
blowbell in general neighborhood of group. Yellowbelly flies off. Nothing follows.

Flock seems very diffuse now 7:25. Yellowbelly flies back into area; but doesn't land very close to any of the other birds.

Does good weather discourage mixed flock formation here, while bad weather encourages it? (If so, it would be another indication that mixed flocks are highly developed in this particular area.)

7:30. Now all the flock birds seem to have gone from area. Probably they have drifted up hill. Presumably together. But probably as a very diffuse, and quiet, group!

Going downhill myself

See single feisty Phoebe, silent and alone 20 ft up in AS.

17 17:35. Then single Cy appears 6-12 ft up in scrub 30 ft away. Singing repeatedly from different perches. NODWAH. Also apparently quite alone.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

17:45 a.m. There does not seem to be any group now where second mixed flock was seen yesterday.

Then I go for a walk along road. Nothing where third flock seen yesterday 8:05 a.m.

8:15 a.m. Some considerable distance down road. 8450 ft. Region of thick, rather diverse, not very tall USF - AS. Come across large mixed flock. Includes at least 3 PL Antpitts, 2 Yellowbellies, 2 Blue & B

94
76

7 or 8 Gray-caps (1), 1 Luteovirens-type, 2 White beards,
1 wood creeper (21?), 1 small warbler or flycatcher type.

Birds on both sides of road. Group as a whole very diffuse.
Not making steady progress in any given direction. Just occasional
"sorties" in different directions. Difficult to tell who, if anyone, is
"leading". Perhaps the Graycaps as much as anyone.

Yellow-bellies & Blue & Blacks (together) f —————> Gray caps
White beard f —————> Gray caps. Yellow bellies f —————> Pl's. Wood
creeper f —————> Luteovirens-type

I presume that the Graycaps are either "perch" or "central" nu-
clear.

Group as a whole fairly quiet. But all or most species (except woo-
d creeper and warbler or flycatcher type) utter a variety of sounds occasion-
ally. Henicopygia-types utter Rattles & Low rumbles.

The Pl's seem to be disputing among themselves. Lots of silent
chases and supplants.

Gray-caps ranging 2-18 ft up. Definitely picking insects off leaves.
Luteovirens-type ranging 8-18 ft up. Also definitely picking insects off
leaves. Woodcreeper 10-18 ft up. Looking for insects on trunks and branches.
Pl's seen only 6-20 ft up. Yellowbellies and Blue & Blacks seen 6-20 ft
up also. White beard flycatching 2-18 ft up.

95

At one time, I heard a brief snatch of White-necked song (NO
DWAH) just downhill. This bird may have been associating with group.

96

Certainly there was one footy thump on outskirts of group for a
couple of minutes. In trees. Uttering alarm notes (at me).

Once, the Graycaps made a little sortie in area mixed scrub (i-
ncluding bamboo). There was nothing else visible or audible in the scrub
at the time. But then the Graycaps left, going back the way they came.

100

And immediately 1 or 2 B. macroscopus emerged from bamboo scrub.

uttered Rattles and Flourishes. Then fell silent and went back into some
b. I & the microcrinites "hid" from the Gray caps; and then showed
hostility after the Gray caps had gone

Group gradually "drifts" off ca. 8:40 a.m. Without my being able
to see where they go.

Sky is gradually clouding over 8:58 a.m.

9:04 a.m. Up hill. Approximate area where third flock seen yesterday
ay. Area mixed (SF-AS) vegetation. Gently glimpse part of mixed flock
ex. Includes at least 1 White-spectacled, 2 White-throats, 1 Inter, 1 Yellow-
belly, 1 Empidonax type. All birds 6-12 ft up. Group as a whole coherent.
t. Difficult to tell who is leading. Perhaps White-spectacled

Group as a whole is quiet. Spent White-spectacled, yellow-bellied. NOD.
WAH. I also hear a few matches of microcrinites and Little Striped Fly-
catcher sounds in neighborhood. Probably with group (presumably tetrap
orally in the case of the microcrinites). SW

This group apparently is not "connected" to the larger (Graycap)
group seen down hill earlier today. But it may well be partly the same
as the third flock seen yesterday.

Leaving 9:45 a.m.

COMMENT: My observations later this morning would not
support the hypothesis that silent weather discourages the formation of
mixed flocks here. But they would suggest that it may tend to encour-
age diffuseness and quietness.

Sierra de Munda

Sept 3, 4, 5

Zumbador - Sept 1965

No Inds seen Alone

|||||

(25)

No. Inds in Flocks

|||||
|||||
|||||

(124)

(149)

83.22%

No Flocks seen

|||||

No. H.O. Flocks seen

|||||

No. spp per Flock

11
4
3 } 18

9
11
6 } 26

11
8
6 } 25

Largest No. Inds / Flock

19

22

69

Sierra de Menda - Zumbados Sept. 1905

No. Inds. seen Alone

III III I

(11)

III III III III

(19)

1409
birds per hour

86.52%

No. Flocks seen

III III

III III (8)

No. U. O. Flocks seen

III III

III III (8)

Largest No. Inds. 1 flock

24

23

No. Inds. in Flocks

(50) III III III III III III III III III

(100) III III III III III III III III III
III III III

(114)

91.20%

III III III III III III III III III
III III III III III III III III III
III III III III II

(122)

No. Spp. per Rock

11 11

4 4

3 8

(X) (X)

12 12

2 6

2 11

5 17

11

(10) 17

(59)

Islands of Florida - Zambador
Sept. 1925

Hours Spent:

| | |
|---------|--------------|
| Sept. 3 | 2 hrs 15 min |
| Sept. 4 | 3 hrs 30 min |
| Sept. 5 | 3 hrs 30 min |

8 hrs 15 min

Paríamo La Negra
April 1965

Apr 3, 65

No Inds Seen Alone

|||||
|||

(53)

No Inds in Flocks

|||||

(28)

34.57%

(81)

No Flocks Seen

||||

No H.O. Flocks Seen

|||

No. Eggs per Flock

2

2

2

2

2

2

Largest No. Inds 1 Flock

3, 4

Apr 5, 6, 7

Sierra de Nevada - P. la Laguna

April 1965

No. Inds. Seen Alone

No. Inds. in Flocks

|||||

|||||

(48)

(28)

||||| 36.84%

|||||

(52)

(28)

8.21
inds per hour

35.00%

No. Flocks Seen

|||||

|||||

No. H. O. Flocks Seen

||

|||

No. spp. Per Flock

2 2

2 2

2 2

2 2

2 2

3 3

Largest No. Inds. 1 Flock

6

Sierra de Merida - P. La Negra

April, 1965

Hours Spent

April 5 3 hrs 00 min

April 6 3 hrs 15 min

April 7 3 hrs 30 min

9 hrs 45 min

Aug. 29, 30, Sept. 2

Sierra de Merula - P. La Negra

Aug - Sept, 1968

No. Inds. Seen Alone

No. Inds. In Flocks

|||||

(50) |||||

||||| (82)

||||| (68)

45.34 %

|||||

|||||

|||||

|||||

(82)

(150)

(66)

45.34 %

No. spp. per Flock

2 2

2 2

2 2

4 4

8 8

2 3

3 3

5 5

2 2

(10) 3 3

2 2

35 %

No. Flocks Seen

||||| (11)

No. W.O. Flocks Seen

||||| (9)

Largest No. Inds. 1 Flock

15

13.04
wds per hour

Lacanja de Miranda - Pico Espino

Aug - Sept. 1945

Hours Spent

Aug. 29 4 hrs 00 min

Aug. 30 4 hrs 00 min

Sept. 2 3 hrs 30 min

11 hrs 30 min

Pico Espozo

April 1965

Station #2
#1

Apr 3, 4, 7,
10, 11

No Inds Seen Alone

|||||
|||||
|||||

(124)

43.12%

No Inds in Flocks

|||||
|||||

(94)

(218)

No. Flocks Seen

|||||

(17)

No. H.O. Flocks Seen

|||||

(8)

Largest No. Inds / Flock

8, 11, 14, 15, 16

No Spp. per Flock

2

3

3

5

2

8

2

4

3

2

2

2

3

3

9

11

2

23

21

25

(69)

Apr 3, 4, 9, 10, 11

Sierra de Mérida - Pico Espejo

April, 1968

No. Inds. Seen Alone

(50) ~~|||||~~

(100) ~~|||||~~

~~||||~~

(105)

No. Inds. in Flocks

(50) ~~|||||~~

~~|||||~~

(88)

43.85%

(50) ~~|||||~~

(100) ~~|||||~~

~~||||~~

(114)

~~|||||~~

~~|||||~~

(85)

42.71%

No. Sp. per Flock

2 2 8 9

2 3 9

3 5

5 2

2 2

6 18

2 2

17 17

2 2

(10) 2 2

2 2

2 2

2 3

3 8

No. Flocks Seen

~~|||||~~

~~|||||~~ (16)

No. H.O. Flocks Seen

~~|||||~~

~~|||||~~ (8)

Largest No. Inds. 1 Flock

14

863
subs per hour

Lacerta de Miranda - Rio Espejo
April 1963

Hours Spent:

| | |
|---------|--------------|
| Apr. 3 | 3 hrs 00 min |
| Apr. 4 | 4 hrs 30 min |
| Apr. 9 | 3 hrs 45 min |
| Apr. 10 | 4 hrs 00 min |
| Apr. 11 | 3 hrs 45 min |

23 hrs 00 min

Pico Espozo August 1965
Station # 2, #1

Aug 28th
31st Sept 1st

No Inds Seen Alone

|||||

(28)

No Inds in Flocks

|||||
|||||
|||||

(105)

78.95%

(132)

No Flocks Seen

|||||

No Eggs per Flock

2

2

2

4

2

4

8

3

27

No. H.O. Flocks Seen

|||||

15

15

8

38

Largest No. Inds 1 Flock

8, 13, 22

Aug. 23, 3 Sept 1

Sierrita de Huenda - Pico Espozo
Aug - Sept. 1965

No. Inds. Seen Alone

|||||

(33)

|||||

(26)

No. Inds. in Flocks

(52) |||||

(100) |||||

|||

(106)

146.26%

|||||

|||||

|||||

(104)

80.00%

2.96 inds
per flock

No. Flocks Seen

|||||

||||| (9)

No. H.O. Flocks Seen

|||||

||||| (8)

Largest No. Inds. 1 Flock

22

22

No. spp per flock

2 2

2 2

2 2

4 4

2 2

4 4

5 8

2 3

2 15

(10) 3 15

15 8

15

8

(15)

Summit of Mount St. Helens - Pico Summit

Aug - Sept 1965

Hours Spent

| | | |
|---------|-------|--------|
| Aug. 28 | 4 hrs | 30 min |
| Aug. 31 | 4 hrs | 15 min |
| Sept. 1 | 6 hrs | 15 min |

14 hrs 30 min

April 15, 1965
Mts. above Bogotá

Arrive one of the higher places I worked before 6:00 am. Quite
quiet. No bird noise

Immediately, the name of this mountain is Guadalupe.
Very little bird song. Hear what may be PL *Atlapetes twitterii*
from distance.

6:12. There is at least one Blue Dendroica (probably G) feeding
in Eucalypt. Other birds in same tree at same time, but they don't
seem to be awfully well coordinated.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

7:15 am. Reach area where Larks and Hummers overlapped
the last time I was here. See group of 3 *Atlapetes pallidimela* ("P
&") moving thru low-thick scrub. (Probably second growth, lots of
Bamboo). Sometimes silent. Sometimes noisy, twitters, "chatter",
"secret" notes. But always definitely alone.

An unusual blackish Dendroica flies by, without my being able
to identify it.

Everything very quiet 8:06 am

April 16, 1965
Mts above Bogotá

Working this morning same general area as yesterday.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

8:15. Area dense second growth scrub. Lots of bamboo. Come

37
5
7
very definite but poorly organized mixed flock. Includes at least 3
White-bearded Flycatchers (same species as in Yquerula - more or less
usual), 1 spine-tail (silent), and at least two B. magister
(very noisy - lots of Rattle-Howlers and loud CN's or ALN's)

One magister f → Flycatchers at least 3 times.

At this point, 2 Hummers f → (independently) Hummers
hop along ground, open path, apparently looking for insects. Silent.

Then the Hummers fly away, separately. No one follows. Then the
magister go down hill. Apparently, no one follows them either.
Throughout the period I watched this flock, the magister
showed a definite tendency to stick to bamboo. The White-bearded
flycatchers showed a preference for small, or dwarf, trees. Both the
warblers and flycatchers ranged 5-10 ft above ground.

8:45 a.m. A single Swallow flies by. Definitely alone.

Leave 7:30 a.m.

April 17, 1965
Paramo de Quana

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

(Big mixed flock, same type and in same place as 1962)

COMMENTS:

I. The flock seen above Quana this morning was really mixed
like the flock(s) seen in the same area in 1962. Almost all the same
species involved. And the species apparently playing much the same
roles.

I was struck (again) this morning by the fact that the mix

ed flock(s) here does (do) not seem to have any "permanent" or "semi-permanent" leaders (and/or species playing a purely passive nuclear role). At one time this morning, different species were "leap-frogging" over one another at a great rate and/or milling about in a very confused-looking manner. (It is obvious, nevertheless, that such flocks are quite "coherent", insofar as different species stay close together for relatively long periods of time.)

If any one species is more of a leader than any others, it is the PR *Cathartes*.

I think that my 1962 comparison between flocks of this type and *Chrysomitris* flocks minus BCBT's probably was a stroke of genius. Also probably quite correct.

II. In general, the mixed flocks of the whole Bogota area (including Guadalupe) seem to be quite the same now as in 1962. Still, there are fewer mixed flocks on Guadalupe than above Quana. And still, it is difficult to say why this should be.

III. The mixed flock situation here seems to be essentially comparable to the corresponding situation in the Sierra de Merida in one important respect. In both areas, mixed flocks are not more common in the non-breeding season than in the breeding season. Why?

IV. There must be some basic biological resemblance between the mountains here and the Sierra de Merida. Not only are mixed flocks similar in both areas, but the local *Myiophobus* are more gregarious during the non-breeding season than during the breeding season in both areas. (In this respect, the *Myiophobus* seem to differ from all related species.) Why??? (Note also that the

(4)

new measure of conspicuousness in the non-breeding season — altho perhaps equally spectacular in both areas — takes very different forms in the two areas. Why?)

April 18, 1965
Mts above Bogotá

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

April 19, 1965
Paramo de Quarcá

Arrive 5:55 a.m. A clear day. It has been light since at least 5:30 a.m. Cold as the air of upades !!! Fin has not reached this area yet. Going to walk along road — rather than go uphill where I made most of my observations of Laps in 1962 (i.e. going where mixed flocks (s) occur).

6:00 a.m. Can hear Whistle songs several *Atlapetes* individuals

single through fleshy. Alone.

6:05. Hear *Atlapetes* Whistle Song in burnt scrub one side road. Switters, which may be by Cy, coming from unburnt scrub other side road, 20-30 ft away.

6:15. See single PL *Atlapetes* perched exposed, unburnt scrub, 6 ft above ground. Uttering Whistle songs. In general area big mixed flock. But apparently alone. Whistle songs more or less "feco feco feco"?

Hummer

Automobile goes by. P2 flies away. Flirts up. Then I hear what sounds like Hummer R-Zaza in nearby scrub. Then catch another glimpse of P2 flying from bush to bush. Definitely (still) alone.

Feb

Then hear Laf singing in distance at 2:1. First Laf heard this morning.

It also is very windy today!

See another ~~single~~ single Laf alone.

7

Single Black Dufors flies by alone.

6:32. From time to time, hear Forbely songs in distance.

Feb

Sun just beginning to reach this area 6:34 (It probably has not reached area where Laps are thickest yet. Note that Laps here seem to have same preference as Laps near Quito.)

Feb

More Laf song in distance.

Feb

In fact, surprisingly enough, there is a big burst of Laf song almost immediately after sun reaches area. Also brief burst Attapet's twitter. Laf songs completely overlap the Attapet's twitter. Also overlap one another.

Feb
Feb

See a couple of Laps 6:38 a.m. One chasing the other.

Then see another Laf alone.

6:55. Wind blowing up full force! And absolutely cutting! It seems to be having a very discouraging effect on the birds. They are staying well under cover. I get only occasional glimpses something (usually Black Duforas, I think) flitting about low in scrub. And all bird song stopped by 6:45 a.m.

6

7:15 a.m. Actually, I wouldn't be surprised if the usual mixed flock were beginning to be formed now. I am catching lots of glimpses of (unidentifiable) birds in the area where the big mixed flock is usually so

en. But all the birds are staying much lower than usual. Also (still) much quieter than usual.

Feb 9 The only thing I am seeing a lot of is Laps lots of chasing. Have the unusual conditions today induced more territorial trespassing than usual???

10 4:28. See single White-bearded Flycatcher alone. Also lots of hummingbirds chasing one another! Lots of goldfinches around. Always alone (as usual).

Hummer 11 4:36. See single White-beard. Probably same individual as before. Single Hummer about 5-10 ft away. The two birds appear to ignore one another.

I do 8:15 am. Working slightly different area. Near where Cy-Twink group was seen the day before yesterday. Come across what seems to be slightly scattered mixed flock. Includes at least 1 PR Atlapetes. In low unburned scrub, 2 ft above ground, on edge burned scrub. After my twitters. Can also hear 1 or more Firebellies singing usual song in small trees, approximately 10 ft away. And hear peculiar noises (a series of loud, tin trumpet-like "Ja-ah" notes) which I think may be uttered by Blue & Orange Tanagers. This group not really moving in any direction at all. Flitting about on outskirts of group w/ 4 or 5 of the large sooty thrushes. This is the largest assemblage of thrushes I have ever seen here. Do the thrushes tend to flock together under unfavorable conditions???

12 8:50. See single Fire ~~bird~~ fly by. Definitely alone.
13 See another single White-beard. Definitely alone.
Leaving 9:00 am

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI
COMMENT: This morning's observations certainly demo

noted one important point. There is no immediate "upsurge" of the tendency (ies) to form mixed flocks when external conditions suddenly turn very unfavorable. The behavior of most of the species this morning may also help to explain why mixed flocks are not more common (or are actually less common) during the non-breeding season than during the breeding season here in the northern Andes (assuming that conditions during the non-breeding season are less "favorable" than conditions during the breeding season - as seems reasonable). When external conditions turn bad, the birds tend to crouch, "hide", in dense vegetation. They probably also move comparatively infrequently and apparently vocalize comparatively infrequently. All this must make them comparatively "unattractive".

April 21, 1965
Mts above Bogotá

SEE TODAY'S NOTES ON MIXED DIGLOSSINI
Which include descriptions of the reactions of birds to sunset following cloud and rain, in the afternoon.

April 22, 1965
Paramo de Guasca

Arrive usual area 3:45 a.m. Cloudy. Probably going to be foggy very shortly. Going to walk along road.
Quite a lot of bird noise. Howlers. Whistle songs of Atlapetes. Others.

Also hear Trubellies, Atlapetes Twitter, and Cy-type songs

5:50 a.m.

See single Trubellie alone 5:55 a.m. Also several single thrushes. Correction: This single Trubellie is perched in tree only 20 ft away from bush in which Atlapetes is giving White song. Atlapetes is PL. Pushed left up bare bush. Songs "Jeeoo joo" and "Jee-oo jeeoo joo". Also about 20 ft from PL I hear several Atlapetes Twitter. Probably PR's. So far, 6:00 a.m., I have seen no overt reactions between these birds of different species, but the group certainly is a "proto-flock", at the very least.

See in 6:01. Difficult to see.

From the sounds I hear, PR's may have paired by singing PL, without being joined by latter. Gone on about 20 ft. Trubellies now nearer PR's than to PL. Possibly Trubellies & PR's already following one another? 6:02.

Laf starts to sing while PL continues White song. Broad overlap. But then PL shuts up. Then both sing again, irregularly. Lots of overlap. But PL may show definite tendency to shut up when Laf is in full spate. Then all silent 6:03.

Then see Cy (definite) singing exposed 30 ft away. Songs pretty much formless twitter. Then some phrases with Intro "Ja-ee-tasee". No other bird(s) singing same time.

Lots of humming birds chasing one another.

Cy shuts up 6:08. Flies down into scrub.

As far as my evidence goes here, Cys and Lafs (still) do not overlap their songs.

Cy back singing 6:09:30 All phrases with Intro Notes

fel

fel

cy

cy

cy

18 Cy song phrases overlap songs nearly indolently
6:12 Dubuna (same species Quito) j ———→ Cy Lands
in bush 1 1/2 ft below where Cy is singing. Cy stops singing moment
arily. Looks at Dubuna. Sings again. Then flies lower down into
bush.

A few minutes later, see Dubuna 20 ft down road, in low-lying
unburned scrub, 2-3 ft above ground. Cy apparently not close
by

Then Laf sings 20 ft further on. Cy silent at time. Laf starts
up. Cy starts to sing immediately. Then see three or 4 Cys in bush,
almost exactly where Dubuna was seen only minute ago. And then
see single Blue & Orange (!) and single PL, only a ft from Cys and
a ft from one another. Definite mixed flock. Then Laf j ———→
group. Then, I think, Laf attacks Cys!!! All birds scatter.

19 Cys fly off one direction. Laf flies off opposite. Both species
sing several phrases. No overlap.

This flock almost certainly not the same flock seen on previous
days. In another area, 1/8 mile away.

22 Blue & Orange j ———→ Cys!
Laf sings again. This time Cy utters 3 separate bursts of
phrases while Laf continues to sing.

Indolently j ———→ group. 6:23

19 At first, I thought tomorrow Laf and pair Cys mutually
exclusive. But then, 6:25, the pair of Cys flies away from flock,
through area where Laf seen only minutes ago. Pass them exact same
bushes where Laf persisted to sing. But Laf not visible now. One
or both Cy (s) sing (s) a few phrases during this journey. No an

answering Laf song! Then Cys disappears up hill.

Certainly, for a brief moment there, Cys and Laf were treating one another as members of same species. But apparently only for a moment. Was this "mix-up" (?) due to the fact that they were brought too close together (which in turn due to the fact that they were both attracted to mixed flock) ???

See Laf in scrub now, 6:32, after Cys have disappeared. NOD. Mixed flock seems to have disappeared. Oh my god! Now hear and see Cys only 30 ft from Laf.

"Intertones" Laf and Cys here now seem to overlap completely.

6:37. See Laf feeding yellow tubular flowers. Cys(s) moving 20 ft away. Laf flies in direction away from Cys. Cys shut up. Laf flies to top small tree. Begins to sing.

Can hear flock coming back now.

Laf shuts up. Cys immediately begins to sing! Laf flies to tree 10 ft away. Silent.

Then Ruf is → Laf lands only 1 ft away. Laf apparently ignores it. Then Ruf flies on. Laf does not follow.

Whole group definitely back 6:40. Now includes a pair of of PL's as well. Cys in middle group. Doing a lot of singing.

Then Cys fly away from group. Followed by 2 Lafs, but nothing else. Cys fed on cup shaped red flowers. Silent. Then 1 Laf apparently pounces upon 1 Cys! Obvious attack. Followed immediately by burst Laf song. Then the two birds separate. Pair Cys goes in one direction, pair Lafs the other.

Then Laf attacks on Cys might well be redirection. Outlets

for the invitation provoked by the presence of the whole mixed flock in general!!!

Everything quiet now 6:50. Rock seems to have moved on again. And other diglossini seem to have disappeared.

Go along road. Find flock again. Both Cys and Lafs apparently still with flock. Both species singing. Complete overlaps!

2x There seem to be 3 Cys with flock.

PL definitely follows → Cys.

Now Cys singing, Lafs silent. Incidentally, songs both species have been quite typical throughout. Some form during flights and at other times.)

2x 7:00 a.m. Flock seems to have gone down hill. Leaving Cys behind. Also has left at least 1 Laf behind. See Laf about 20 ft from Cy(s). Then Laf paries by Cys. Cys in tree, 15 ft up. Laf moving low, 3 ft above ground. No apparent reaction between species. Cys now silent. Laf moves on. One Cy starts to sing again.

Cy Laf Now hear PL uttering Whistle songs. At first alternates phrases with Cy. Then Cy shuts up. PL continues. PL shuts up. A minute later Cy starts to sing again. Shuts up. Laf sings in distance. Shuts up. Cy sings again. Shuts up. A minute later, Laf sings again. Shuts up. During this last Laf song, the Laf was perched on top small tree only 20 ft from bush containing Cys. But the Cys remained quiet in bottom of bush throughout Laf song. After finishing its song, the Laf flew away to a more distant tree. Perched there silently. Immediately, Cy hopped up to top of its own bush and began to sing while Laf remained silent.)

Cy Laf 7:12. Oh oh! Sudden outburst lots of Laf and Cy songs.

Laf *cy* Complete overlap. But flock apparently not present! I think two of the local Laps are engaged in a boundary dispute. Then suddenly one Laf flies into same tree as Cy! Only 4 ft away. Cy singing. Laf silent. Laf just looks at Cy. Cy continues singing for perhaps half a minute. Then Cy flies away. Laf f —————> Cy! Apparently "escorting". But then the two birds separate.

cy *Laf* Cys singing again 7:18. Then a Laf starts to sing again in distance. Complete overlaps. But apparently random. Can't see that one species is stimulating the other.

cy *Laf* Both species moving around a lot. Their territories still seem to be completely or almost completely overlapping. And I have seen both species feed on same tubular yellow and cup-shaped red flowers. Also, around here, they both seem to be ranging their same heights vegetation (1 - 20 ft — i.e. the complete range available here).

Overlaps songs still continuing 7:20.

cy *Laf* I think Cys show a tendency to retreat whenever a Laf sing is particularly close by (within 20 or 30 ft). Laf certainly the "dominant" species here.

Laf Notes. 7:24. Fight between 2 Laps With "scent" and "Guck"

Everything quiet 7:30.

Laf *cy* Then Laf sings. This seems to stimulate Cy to sing! Overlap. Then Laf shuts up. Cy continues. Then Cy shuts up.

flock. Going down road 7:32, to see if I can find a mixed

Laf NO! Just as I start to go, complications arise. Laf sings.

Long and long. This appears to stimulate songs by other displac-
ment. Just I hear a couple of Cy type phrases. Don't see singing
birds. But songs are coming from a bush in which I know a Cy
was uttering only a minute ago. So these songs must be by Cy.
Cy about 25 ft from Laf. Then I hear some thin, short, rather
or formless twitters (I can't tell if they have three notes or not)
coming from tree 30 ft from Cy — and 55 ft from Laf. Look
up to find 1 adult Coer and 1 juv. Coer in this tree !!! It is the
adult which is giving these songs. Then Laf shuts up. General
silence. A few minutes later, Coers fly off.

Both the Cy and Coer songs overlapped completely with Laf
songs. But I think that the Cy and Coer did not overlap one an-
other.

The tree in which the Coers were seen is one in which I have
seen both Cys and Laps on other occasions. This tree is covered
with clusters small greenish yellow fruits. The Coers ate the fruits
avidly. Unlike the Laps and Cys on earlier occasions. Both the
Lap and Cys completely ignored the fruits.

Presumably the Coers here are more frugivorous than the local
Cys ???

The fact that Coers seem to show up here only occasionally
would suggest that they have larger territories than the local Cys,
Laps, or Hummers.

Incidentally, I don't remember seeing Coers in this region
in 1962. Their presence here now may be another example of the
general tendency for different species to "spread out" and overlap more
during the breeding season than during the non-breeding season.

43 7:50. Cy perched top of tree where Coers seen earlier.
Singing. Short phrases. All with "Treet treet" Intro Notes. NOD.
Fundamentally, I have now come to the conclusion that Cys and
Coers are easy to tell apart.

44 Cy shuts up after a couple of minutes.
Cys and Coers do seem to be managing to avoid physical
or vocal contact with one another. Does this suggest that they compete
with one another more or less than do the more typical Diglossa
species (Hamer, Laf, Baeu) here ???

45 Everything silent 7:55 am. Going to try going down road
again).

46 See several Lafs, alone and in pairs (chasing one another).
Lots of Laf songs. NOD.

47 8:01. See big Pheniceus Grosbeak. The other species. The one
I've never seen before. Black above. Including whole head & throat.
Single individual. Apparently alone.

48 See group 3 Laf flying about together. Alone.
Lafs certainly are singing more than on my first day here!
First sign of approaching breeding season ???

49 Wind increasing 8:10.

50 See a Blue Diglossa, apparently Cy, being chased by small
hummingbird. Diglossa lands in thick scrub. Out of sight. But
utters several Cy-type song phrases. NOD.

51 Why do almost all the nectarivorous birds here show so
much inter-specific hostility. Populations are dense here, but
no denser than many other areas I have worked in. And there are quite
a lot of flowers around.

Hummer [✓] A pair of what seem to be Hummers flies by. Near where Hummer seen before. Alone. Yes! Definitely Hummer (s). Near R-3a 3a 8:20

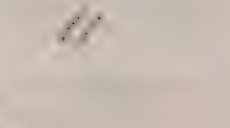
See lots of single roosting thrushes

4:17 See single *Swainson's*. Silent. Apparently alone

4:18 See another *Swainson's*. Alone, NOD. This bird sings a lot.

4:19 For several minutes on end. After about 1 minute, a Blue Dendroica in a tree about 30 ft away also begins to sing. Apparently Cy complete overlap. Presumably Cy utters at least 7 or 8 phrases while the *Swainson's* in full spate. Both birds shut up at approximately same time.

These individuals definitely different from the ones heard overlapping up hill earlier.

4:20 8:33 Hear more Cy-type songs in distance, while *Swainson's* are silent. Finally no bird. Definitely Cy. Song phrases somewhat variable. May more or less "Tit tit tawee ".

Then this bird shuts up. Flies off.

Hummer Then I hear a few phrases which sound like songs of Hummers down by University. Terminal R's. Then this bird shuts up. A few seconds later see Hummer (silent) same area.

8:40. I have now been around the whole area where the big mixed flock is usually found — without seeing a trace of it! Has it moved on to another area? Was the flock seen up hill earlier actually the same ???

4:21 Now *Swainson's* singing again. NOD.

4:22 8:59. See pair of *Swainson's* alone.

9:04. Have now gone around whole area again. Again without seeing the mixed flock.

Things in general much quieter now. No songs.

Feb

53

See another single Laf. Then hear more Laf song. NOD.

Leaving 7:10 a.m.

COMMENT:

Feb
Cyg

The relations between Lafs and Cyps today can be summarized by a division into two phases.

I. Early in the morning. When mixed flocks were not present in the immediate neighborhood, the two species behaved as in the Quite region. Mutual avoidance and inhibition apparently fully operative. Territorial overlapping, but no fighting or close approach (?) or overlapping of song. When mixed flocks were present, however, individuals of the two species behaved as if they belonged to the same species. Overlapping of songs, close approaches, and actual attacks.

Feb
Cyg

II. Later in the morning. Relations between the two species particularly "intermediate". Frequent overlapping of songs, some fairly close approaches, but no actual attacks.

Feb
Cyg

The mutual avoidance and inhibition early in the morning may have been an indication of breeding mood. (If the birds are just beginning to come into breeding condition, one might expect the only revelations of this condition to occur at dawn.)

The inter-specific attacks may have been redirection and/or persistent expressions of "non-breeding" mood.

Open

The overlapping of songs, probably an indication of inter-specific hostility, apart from very strong stimuli releasing attack, may be compared with the gradual development of overt inter-specific hostility in the Hummer - Bani - Scan community in Bogota' streets.

Laf
Coer

The very brief Laf - Coer encounter would suggest that Lafs
may treat Coers like up.

April 23, 1965
Paramo de Quasca

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

In general, today's observations would suggest that mixed
flocks are less "highly developed" here, now, than in the breeding
season of 1962. At least, the birds in the mixed flock today were re-
latively quiet, stationary, and inconspicuous. It is beginning to
look as if mixed flocks tend to be this way now.

This both resembles and differs from the situation in
the Sierra de Merida a couple of weeks ago.

April 24, 1964
Aguila Bonita

Going to start work at the lowest place here where I worked
in 1962. Arrive 5:37 a.m. Already quite light. Warm.

Lots of bird noise. Lots of Rattle and Rattle-Hawm-like
calls which sound like Bandlinterms and/or Hemispingus. Also lots
of other things. But nothing noticeably Diglossini.

Lots and lots of birds around. But almost impossible to see.
Scrub here may be second growth, but it is very dense and thick.

Walking thru edge scrub 6:00 a.m. Hear lots of birds. Get some
brief glimpses. But all unidentifiable.

Albi?

6:08 Cutler brief glimpse Black Diglossa. Silent. Apparently alone.
 1. Feeding Lutescent small yellow tubular flowers 6-10 ft above ground.
 Species almost certainly Albi.

See noise now 6:12

6:15 a.m. Pass thru an area which sounds as if it contained a lot of birds. Certainly B. magister. But all the birds are keeping well undercover.

6:40. Hear what sounds like Tumbelles in distance!

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

Tup

7:15. Come across huge mixed flock. Containing at least 20 birds! In region of extremely varied, obviously humid, vegetation. Tall trees, bushes, lots of trailing bamboo. I certainly didn't identify all the birds; but I did see the following: two White-spectacled Whitestarts (definitely identified - white spectacles conspicuous - yellow foreheads - presumably albifrons - same as near Merip).
 2 Pipilo rufus, 1 P. altipetres (definitely not pair), 2 Green
 11 Toucanets (not seen well enough to identify species), several humming-
 12 birds and flycatchers, 1 Black Diglossa (probably ♂ Albi), at least
 14 1 Cnemidopus ruber, at least 1 Tanager XXIV, which I iden-
 20 tified last year as Hirundo atropurpurea, and at least 6 leaf-scaper like formicids (LXXXI). Also 1 brownish squirrel.

Albi?

The formicids LXXXI definitely were panive nuclear! (First formicid I have ever seen play this role, I think) Forming at least the "central" group. Sometimes in lead; sometimes apparently not. (Perhaps comparable BCBT's in Chiriqui.) The Black Diglossa was seen only briefly. Probably only joined → group once. The Green Toucanets sat joined near of group once, sat there, and di-

& some "croaking". (For all I know, they were attracted to me rather than the other birds.) The Pipreolas, Whitetails, and Pl. Atlap etc formed the definite rear guard of the flock. All three species followed and joined repeatedly.

The flock as a whole was very well integrated! Birds sticking quite close together. When flock was first seen, it was moving rapidly uphill. Then stopped and stayed stationary until approximately 8:00 a.m. Then started uphill again.

Now (8:15), as I am writing, seems to be coming back again moving rapidly down hill. As if games, I can see that it has picked up new members. At least: 1 Thraupis cyanocephala, 1 Tangara (probably labradoroides) 1 Cnemidopus → labradoroides!!!
25 1 Whitetail → cyanocephala. Group also includes 2 or 3 small warblers or cowbird like forms

Group disappears again 8:25.

I noticed that the Pipreolas, cyanocephala, presumed labradoroides, and toucans all stayed in trees while with flock. 20-40 ft above ground. All the other birds ranged from very low scrub, only a few inches above ground, to tall trees 20-40 ft above. Whitetails probably more often high than low. Pl probably more often low than high. Furnariids, Cnemidopus, and Hemiprocne usually middle.

Group sometimes quiet, sometimes noisy. Lots of "CN"s even when most quiet. Whitetails sang occasionally. Occasional outbursts rattles and "chatter" by others. Furnariids gave loud bursts of very metallic chatter when they first became aware of me, but then they quieted down.

The squirrel was a small species. Warm medium brown. Tail

grayer than body. Probably different species from squirrel with flocks near Merida. Quiet. I believe the squirrels with the Merida flocks also were silent. Definitely following flock. But keeping behind the vanguard of birds (i.e. Pipreola, Whitestarts, etc.)

There was no sign of overt hostility in the flock, except for a couple of supplanting attacks by Pipreola on the others.

It is interesting that neither Firebellies nor Blue & Oranges joined this flock. I don't think they are attracted to species in dense, high, moist vegetation.

Going down hill myself 8:38 a.m.

Call 7 8:43. See single ♀ alb.. Definitely identified. Silent and alone feeding edge mound growth scrub. 3 ft above ground. Apparently looking for insects.

See coming out 8:48 p.m.

26 ADDITION: One thrush, presumably usual slaty gray species, joined the big mixed flock at least briefly on its way down hill.

3 9:07 a.m. See single Basileuterus. Probably microscitatus. Saw in scrub. Silent. Definitely alone.

4 9:30. Down by road. See single White-speckled Whitestart flitting about in trees. Hear sounds other birds in low scrub below.

9:37. Hear what sounds like Ag song.

Leaving 9:48 a.m.

COMMENT: Even though I finally did see a large mixed flock, my earlier remarks still stand. All morning long, up until the very moment I left, I kept hearing lots of bird noises (mostly "ch" during the latter part of the morning) from inside adjacent scrub. There must have been a very great many birds around, so

(2)

mingly in groups of two or more species, which I did not see this morning.

COMMENT. To my knowledge, I have never seen Blue & Orange Tanagers apart from mixed flocks. They may be "obligate communalists" in much the same way as Conurostrum vitticolor sp. In fact, I am not sure that I have ever seen Blue & Orange Tanagers apart from flocks which also included "Swallows". Could the Blue & Orange be an obligate commensal of the Swallow???

April 23, 1965
Aqua Bonita

Working same general area this morning as yesterday morning. Arrive 5:22 a.m. Still quite dark.

Lots of bird songs and other noises 5:35 a.m. As yesterday.

Possible by song 5:40 a.m. Overlapping with all sorts of things, but not, apparently, other Dryocopus songs.

5:44. White-throat singing on distance.

5:49. See single ♀ Alba (definite) feeding alone tangle and scrub 6 ft above ground. Apparently looking for insects.

God! There are a lot of birds here. And all invisible or little red hiccups across the sky!

5:59. Come across single Atlapetes-type. Looks like torquatus. White throat. Black cheek patch. Gray stripe above cheek patch. Black stripe above gray. Center crown gray. Back & wings apparently olive. But bill light, sort of dirty orange. I shall call this LXXXII. Uttering lots of "secret" notes. Definitely alone. Hopping thru dense scrub only 9 ft or

no above ground

17 6:10. See single B. nigriventris (definite) hopping thru low
n, low, new second growth scrub. Uttering SAN-type Notes. Definitely
lydous. Still alone 6:17 ✓

6 6:18. See single White-speckled Whitestart alone. In tree 40 ft ab
ove ground.

all 7
Hummer 7
9 Hear a few sounds which may be Albi R's. Also hear some
sounds which may be Hummer R-Zaza! 6:20 a.m. No overlap.

9 6:21. See single Trichothraupis flies by 6:21. Definitely alone. Silent. Also
single rosy thrush alone.

There are various solitary Py. catenatus around.

10 6:30. See (another) single Trichothraupis. Top small tree in relatively
open scrub. Edge real forest. Apparently alone.

Some distance further on (500 yds) see single rosy thrush alone.

11 6:38. See single nigriventris Alone in scrub, 6 ft above grou
nd. Silent

It is possible that, although there may be more (and more specula
ular) mixed flocks here than in Merida, the species which are gregarious
in Merida are less gregarious here (???)

6:49. Hear what sounds like Coen song. "Zoo-wee zoo-wee -
twitter" Only a few phrases. No other dialogue audible at same time
e. Bird invisible

6:50. There is no Whitestart audible while presumed Coen is singing.
But then the latter shuts up. And Whitestarts start singing almost imme
diately

7:05 a.m. Reach area where Hummer - Albi dispute seen yester
day. Nothing (identifiable) around now.

Coer 13

Then, 7:10 a.m., see what seems to be pair Coers in tree 50 ft away silent above. Apparently feeding small green berries. This (also) is not far from where presumed Coer heard singing earlier.

7:15 - 7:35 General confusion. Trying to watch two sets birds at same time. Mixed flock on the one hand, and a variety of Diglossini on the other.

II 26
110

Mixed flock. First see a pair of Hemisporus. The type which I have been calling atro-pileus here, but which may well be something like trifasciatus. Passing thru varied, dense, low, obviously young second-growth (no tree cover). 3-15 ft above ground. Feeding on insects. One Begging from the other. Hoarse "Wah" type notes and Wung-Q. It is actually fed by the other from time to time. This pair eventually is joined, and then followed repeatedly by a pair of PR Altapetes. (I noticed that the local PR's here have yellow spots at forehead base crown stripe.) Latter also noisy. Uttering twitter-type greetings.

Coer 14

Some minutes before the Hemisporus appeared, a single Coer flew (back) into fruit tree where Coers were earlier. Definitely identified. Definitely feeding on fruit. Picking fruit off stem and then chewing it (i.e. no stabbing and sucking - fruit presumably not very juicy). Then begins to sing (perhaps just as Hemisporus show up.) Songs exactly as heard before. Single or double "Zooee" or "Wooee" Notes as Intro followed by fairly long, rapid, regular, not very loud, rather musical twitter.

Albi 15

Twitter is going on, see single ♀ Albi, in low bush, 30 ft away silent. Approximately 4 ft above ground. He flies off almost immediately.

14. *Uy* *Coer* Approximately a minute later, no single *Phae Dufona* in same bush. Almost certainly *Uy*. Silent and alone. Flies off, part tree in which *Coer* is still singing as before. *Uy* perches about 30 ft below *Coer*.

Uy *Albi* *Coer* So *Uy* and *Albi* territories seem to overlap here (I think I established this in 1962). *Uy* and *Coer* territories may also overlap. Shortly after the *Uy* flies by, the nature of the songs from the fruit tree appears to change. Intro Notes become more like "foooo", and become relatively louder. And the twitter part of the song phrases becomes more *Uy*-like - very much like the shorter *Uy* phrases at the Paramo' de Quasca. I think that a *Uy* must have gone up in this tree and begun to sing. But I can't see the bird.

When these *Uy*-like phrases begin, the typical *Coer* phrases stop. No overlap.

Uy If there was a *Uy* in this tree, it did not feed on fruits. I would have seen it moving if it had fed.

Coer Anyway, a few minutes later, the *Uy* type phrases stop. Typical *Coer* phrases begin again. And now I see an undoubted *Coer* feeding on fruit again. Also definitely see that this is the bird which is uttering the *Coer*-type phrases. See mandibles moving.

Coer *Uy* The *Coer* has been ranging 25-40 ft above ground in the tree. If there was a *Uy* in the tree, it stuck to 20-25 ft level.

Coer *Uy* This evidence, such as it is, fully supports the hypothesis that the mutual avoidance, inhibition, mechanisms are fully operative in the *Uy*-*Coer* relations here.

Coer 8:00 a.m. *Coer* still in tree. Still uttering typical *Coer* type phrases.

Coer

Junco's Coer song phrases are accelerating. And first Intro
Note usually or always longer than second. So each phrase as a whole is
accelerating throughout.

Coer

Now see there are two Coers in tree. Then both fly off to high tan-
gle mass - on opposite side of area where Hammer & Albi fought yester-
day. Sound 25 ft above ground. Silent

Coer
Hammer

So the Coer territory or range here must overlap that of Hammer
as well.

Going on to another area 8:10 a.m.

A little bit down hill hear lots of forest "Notes like those made
by the A. torquatus - type earlier this morning. This species probably very co-
mmon here

Coer

8:17. Hear Whitestart singing up hill. In more or less same area
a where Coer and presumed Cy sang earlier. It must be significant that
there was not a trace of Whitestart song while the Diglossas were
singing (Whitestart is sang both before and after)

Coer

Road makes bend, passing back near where Coer and presumed
Cy sang earlier. 8:23. Hear Coer singing. Whitestart(s) silent.

As I remember, there were no Whitestarts at Paramo de Guasca.
Could this have been because they couldn't sing there? Because there
were too many singing Diglossas present?

III
HO

8:35 a.m. Considerably up hill. Birds mostly bright green tanager
or (red bell, chestnut face - same species seen Munchique - Chlor-
ornis or something - I shall call it "GT"). Lands in tangle, 20 ft
up. Utters a couple of GT type notes - then flies off. Definitely alone

37

See single White-bellied Flycatcher above. Top tall tree
A little further on, hear lots of loud sounds bamboo scrub. Flock?

34 Is Whitehead on outskirts this flock ??? (Incidentally, this area is
not far below where large mixed flock seen yesterday.) Saw tiny flock
35 round above, that the group here now includes Whitehead, Trindley,
and several other species. Then see one sooty thrush in general mixed
36 bushland. Then see 1 Pipit flying about top trees, 20 ft above ground.
(All this in quite limited area. Must be largely same flock seen yesterday.)
Group does not seem to be moving, as a whole, in any particular direction.

37 All the sooty thrushes here look, at least superficially, like typical pusillater. Are they really joining mixed flocks as regular members?
More probably just "freezing in" like some Chiriqui thrushes.
See single ♀ Albi, briefly, far on outskirts flock area.
Then see single GT (probably same bird seen earlier) in tree flock area!

38 Can't tell if flock has nucleus of formicivids now or not 8:59.
Think I hear cyanocephalus singing nearby. (✓)
39 See single bird which looks like Tangara labradouides in trees
outskirts flock area.

40 See GT again. Silent. Definitely on outskirts flock.
Thrush apparently still flying around.
Starting to rain 9:05.
Group seems to have scattered or gone on. Starting down hill myself
9:15 am.

41 9:20 am. See small hummingbird being attacked and chased in
flight by Black Dufour. Unfortunately, species not identified.
42 I am not surprised to find Boni absent here. Area looks much
too humid.

79 Ram stopped 9:33 a.m.

9:35 Down by road. See single Red-throated Whitestart alone

70 Then a single bright blue bird, apparently T. rasoni, flies by alone

Leave 10:00 a.m.

71 On the way back to town, at an elevation several hundred feet higher, a single GT flies across the highway. Alone

COMMENT.

The Agua Bonita area differs from the areas near Guana and above Bagota in type of vegetation as well as in altitude. Much of the Agua Bonita area is scrub, now. But there also are occasional tall trees (like the mountain forest trees in Chiriqui) scattered about. Much taller than any trees seen near Guana or on Guadalupe. Reaching perhaps 60 ft. It seems likely that the original "virgin" vegetation of the Agua Bonita region was a complete forest of such tall trees.

Incidentally, there are Eucalyptus on the edge of the scrub at Agua Bonita. But they are not in flower now. And I have never seen a Dylommene in them.

This afternoon going to work on Guadalupe. At the lower area where I worked in 1962. Arrive 3:12 p.m. Cloudy, but no rain or fog. Everything very silent.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

3:35. See pair Sooty Thrushes alone

add 711 3:45. Single Scrubbelly flies by. Following another bird, almost certainly of another species, which I didn't identify

Leave 4:30 p.m., without seeing anything more of interest

April 26, 1965
La Aguadita

Arrive 5:35 a.m. Cloudy. Just getting light

A fair amount of bird song 5:38 a.m.

805
7
450
Something is giving a rather diglossini type song. 5-17 Intro
"Tut" notes followed by a Twitter. BQ ??? 5:40. Then this stops.
And I hear something like Ag in distance

5:47. See a footy Hirundo alone.

5:57. See single Tanager, which may be hawaii. In top small tree.
Also single Hirundo Saltator (SS) in bush. Both alone.

6:14. Lots of goldfinches around. Alone as usual

There are a few Erythroneura here. Same species Mérida. But they have almost completely lost their flowers. Does seem attractive to anything.

God! This place is really poor in birds!!!

See a Eucalyptus tree in full flower, without a bird in it!

Well! Well! A ♂ Scarlet-thighed Dacnis (!) flies by. Silent and alone.

6:50. See a Eucalypt with some small birds way up in top.
More Dacnis ???

Then see a N. American Meadowlark Alone

7:10. Have passed a couple of small gardens with lots of Choullas in them. But no houzappers of any sort

7:15 See another "♂ Scarlet-thighed Dacnis" This is not the same as the Scarlet-thighed Dacnis in Panama. Has large patch of rather

greenish-golden buff in capular region! (I can't see scarlet throats either, but this is not necessarily significant). In tree with Goldfinch or and Sprockhulas. But it seems to me to be paying attention to them. Not very common. The "pseudo scarlet-throats" ("PST") eventually flies off, but the other birds don't follow. The PST was feeding by picking at leaves, apparently looking for insects. 20-30 ft above ground.

In the PST a Tangara?

Incidentally, the whole area where I am working now is largely pasture. Only occasional gardens, "hedges", and other patches of scrub and trees. Surrounding hills are covered by forest, but they are rather far away.

Go quite far up hill 17:45. See some more single sooty Thrushes that is all. So start down hill again.

8:23. Hear what may be BG singing. Determinate, bell-like phrases "tee tee tee tee tee tee" type. High in Eucalypt.

8:40. See another large Eucalypt in bloom. Quite a lot of humming birds are feeding on the flowers, and disputing among themselves. But apparently no diglossids!

Leaving 8:50 a.m.

NOTES:

- I. The PST is Tangara cyanicollis.
- II. Hemiprocne tristis does not occur here. The birds which I have been calling atro-pileus must really be atro-pileus!
- III. I think that all the birds I have been calling Tangara cabanerosoides (certainly all the birds I have been calling by that name this year) are really Tangara nigrovirens.

30
April 27, 1955
Hto. above Bageta

SEE TODAY'S NOTES ON MIXED DIGLOSSINI

August 20, 1965
Aguia Perita

Going to work in usual place, here, this morning. Arrive usual parking place (17550 ft according to my altimeter now) 5:25 a.m. Just starting to get light. Partly cloudy. Not too cold.

Quite a lot of miscellaneous bird songs and other noises. Including R's. I can't tell if the latter are *Albis* or not. Many *NODWA*.

5:36 a.m. Just Whitestart songs. Sound like Yellowfaces. Partly overlapping R's.

5:40 Just *Atlapetes* Whistle Song. *NODWA*. Then *Atlapetes* shut up. Whitestarts and R's continue. Apparently overlapping at random. Then hear some *Basileuterus* R's and *Howlers*. Certainly the breeding season here now!!!

5:44. Whitestarts silent. R's continuing.

The vegetation has grown up considerably since I was here last.

5:48. Hear what sound like *Atlapetes torquatus* Whistles (in indistinct series). *NODWA*. But overlapping *Basileuterus* R's at random. Then Yellowface songs. Overlapped completely by *torquatus* Whistles. Again.

Then see *torquatus*. 3 ft up in tangle second growth vines. I think I saw *torquatus* say off a few months ago. Definitely alone.

5:53. See pair *Basileuterus* 15 ft up in tangle of vines. Presumably *magisteratus*. Very noisy. Lots of R's and *Howlers*. Fly into *Cero* *gr* where there is already a Whitestart. Presumably Yellowface. This will have to be classified as forming.

There is a decrease in bird noises at 6:01 a.m.
Sky is clearing now.

Actually, I don't remember if the "high altitude Whistler" here is really Yellowface or not (I shall call it "Yellowface" for time being.) But it certainly is member same species or super-species. The songs of the birds here now sound remarkably like those of the undoubted Yellowfaces in the Central and Western Cordilleras.

6:10. See single Howler alone. 6-10 ft up thick second growth scrub. Uttering "CN"s and "PR"s.

"Yellowfaces" still singing. NODWA. Then there are more R's. Completely overlapped by "Yellowface" songs.

NOTE: All the R's cited above — with the exception of those specifically labeled Basileuterus — sound as if they could be uttered by either Albis and/or flycatchers.

Starting uphill 6:17 a.m.

6:18. Hear what may be Cy song in distance. NODWA. Then more Albi-type R's. Hear by. NODWA. Then more "Yellowface" song. NODWA.

As usual, I can hear a lot of birds here which I cannot see.

6:30 a.m. 17800 ft. See single All-rufous Synallaxis in thick second growth scrub. 3 ft up. Silent and alone. Then this bird flies across path into another, similar thicket, in which there already are at least 2 wrens (not a species with which I am familiar) and 3 Little Striped Flycatchers (apparently same species as on Purace!) Both wrens and flycatchers noisy. Flycatchers ranging 6-10 ft up.

Then flycatchers move around in big circle thru scrub. Not followed by wrens or Synallaxis.

While this is going on, I can hear a lot of typical songs by Cy not far away. Possibly a response to appearance of other birds. But, as far as I can tell, Cy does not join any of the others.

W W

11
 12
 Allie
 A few minutes later, I hear, but do not see, a couple of B. nigrocrinitatus low in scrub where Little Striped Flycatchers were earlier. Flycatchers apparently gone by now. Then a single ♀ Albi flies into tree above warblers 15 ft up. Feeds clusters of balak red flowers. Silent. Flies away while warblers are still around.

Albi

Ag did not sing while Allie was around.
 As far as I could tell, all their Ag songs were NODWA.
 More "Yellowface" songs in distance. NODWA.

Slightly farther uphill, I see that a good deal of scrub has been cut down since I was here last. To make new paths. I am lost!

See a single sooty Thrush alone 15 ft up in tree fern.

7:00 a.m. Find beginning main path uphill which I followed last time. Very overgrown. Lots of bird homes in scrub. Also Ag songs in early (again). NODWA.

15
 16
 17
 18
 Hear Dubuna singing in distance. Also appear what sounds like a mixed flock somewhat closer. Sounds of B. nigrocrinitatus, "Yellowfaces", and, apparently, Ag(s). "Yellowfaces" and presumed Ag(s) singing. But not overlapping one another.

This region is 7860 ft. Region of very mixed scrub, all heights, with lots of bamboo. Very thick. Also a few, rather scattered, tall, possibly mature, VSF trees.

16
 17
 Suddenly a single trogon appears. Perches 20 ft up in tree. Silent. Then a single hummingbird flies by. Apparently Euscyra!

20
 The 3 "Yellowfaces" appear in trees, quite near where trogon was a few seconds earlier. Quite noisy. Some song. NODWA. I see that these birds have some white on cheek and/or near eyes. Is this the species which I used to call "White-spitailed"?)

④ / ⑤

21

Then there is some more Dubuna song. Getting closer. Then I hear more Barkentinus and/or Hemipungus-type sounds about 200 ft down hill. In low thick scrub. Probably 3-8 ft up. Suddenly, the 3 "Yellowfaces" fly down into this scrub area. Range 4-10 ft up. I think this movement must be considered care of "Yellowfaces" j → group. When I get my glasses fixed on the scrub, I see that one bush contains 1 ♀ Albi (definite) and several olive-yellow birds, in addition to the "Yellowfaces". ♀ Albi feeding on flowers, 2-6 ft up. No olive-yellow birds not feeding on flowers, but approximately same levels above ground. Birds of different species in this bush sometimes only 1-2 ft apart. No overt hostility or other specific reactions among them.

22

25

Then I see a single PL Atlapetes in scrub 10 ft away. Silent. Disappears almost immediately. Then I see the Dubuna in nearby small tree and tangles. Also disappears immediately. Both PL and Dubuna 6-15 ft up when in sight.

Then the "Yellowfaces" fly up into small trees 20-30 ft away. Ranging 10-25 ft up. Apparently nothing follows them.

26

Then a single GT suddenly appears. In trees where "Yellowfaces" were first (They are now about 300 ft away). GT 6-8 ft up. Also moves on immediately. Possibly following a course parallel to PL and Dubuna seen earlier, but certainly not close to them!

27

A few seconds later, there is a furious chase, involving 2 ♂ Albis, low in scrub near where GT was. (This is far from where the ♀ Albi was seen earlier. As far as I can tell, the ♀ Albi has disappeared by the time the ♂'s show up.) ♂ Albis quite noisy and conspicuous.

SEE TODAY'S NOTES ON MIXED DIGLOSSINI But soon disappear.

28

I think this dispute among the ♂ Albis probably was provoked

by one bird trespassing into the territory of another, in the course of "encouraging" some other species. Like the dispute among the ♂ Albes at La Palma in the Western Cordillera.

I suppose that the disputes among Albes when other species pass by may add to the attractiveness of mixed flocks. Like the disputes among Yellow-throated Ticks in Chiriqui.

I hear a few more presumed Cy songs (NODWA) from time to time during this period, but not when either ♀ or ♂ Albes are visible!

When the ♀ Albe and "Yellowfaces" were close together in bush earlier, the group was visited by a single hummingbird. Apparently White-throat. The hummingbird did not attack, and soon flew on.

Some minutes after the ♂ Albes have come and gone, a single H. atropurpureus appears in bamboo-similar region. 6-12 ft up. Silent. Apparently at least 100 ft from nearest bird of another species at the time. Also disappears almost immediately. A few seconds later, I see a small wren (species unidentified) same region.

All this occurs ca. 7:20 - 7:45 a.m.

I think that all these birds, from the presumed Eurifera to the atropurpureus and the wren may have been members of a single, real, social group. But, if so, the group as a whole was very diffuse. (Rather Sierra-de-Merceda-like!) Apparently without real leaders.

Fog starts to come in, ca. 8:10 a.m.

During period 7:55 - 8:20, I can hear occasional snatches "Yellow face" song and Banlentrus and/or Housprugus-type sounds in the neighborhood. These birds apparently are not close together now. And the other species are neither audible nor visible.

Then, 8:25, I hear more sounds which suggest that other birds

are coming back, but I can't see them.

Then silence again. I am going to try to go further uphill. 8:32 a.m. Fog is lifting.

Reach highest point of path 8:45 a.m. This site is 8010 ft according to my altimeter now. This is where flocks were seen a couple of months ago; but there is nothing here right now.

Then I hear some "Yellowface" song not far away. NODWA.

Then I find that there is, in fact, a continuation of this path going even further uphill. So I start to follow it. Only a few yards along, I hear more Dulcinea song. Then come to clearing, with thick scrub of moderate height (including bamboo). More or less surrounded by more or less tall trees. And there certainly is a mixed flock type.

First, I see a single bird which looks like an all-sooty Synallaxis. Juv. univisa? Silent. 3 ft up in scrub. Then suddenly see 1 or 2 Little Striped Flycatchers, 5-12 ft up edge clearing. Uttering g R's. Then 4 large tanagers, close together, move thru the adjacent tree-tops. I can't identify them definitely. But they certainly are at least partly blue. Probably some or all are Big Buttercupis. Quiet, except for occasional "crr"s. Then I see myiophobus, 4-6 ft up in bamboo. Then I see 2 "Yellowfaces", 1 PL, and 1 Forbelle, quite close together in tangles of vines, 15-25 ft up, about 30 ft away. Rather quiet. Then the group just seems to "fade away".

I think this is probably pretty same group seen earlier.

Certainly it is (still) quite diffuse - as a whole. Also rather quiet as a whole.

The presumed Big Buttercupis and the Little Striped Flycatcher was seemed to be dividing the lead between them. The "Yellowfaces", PL,

and Towhees certainly were in rear.

The "Yellowfaces" certainly have some white around eyes.

Starting downhill 9:23 a.m. Light fog coming in again

12 9:36 a.m. See single B. nigrocrinitatus. Quiet. Apparently alone. 2 ft up dense scrub. Then hear other birds ca. 50-100 yds away. But probably not associating with the nigrocrinitatus

9:44 a.m. Down where first flock seen this morning. Can (still) hear "Yellowface" and Basileuterus and/or Myiophobus sounds. Can also hear other birds in neighborhood. But all apparently quite scattered

13 9:53 a.m. 81780 ft. See single Ruddy Flycatcher alone. Perched exposed 12 ft up region bamboo scrub

15 10:02. 8080 ft. Region very much cut up second growth. See pair of BT's. Quiet. Definitely alone. Ranging 15-20 ft up second growth trees. Rain starting!

VI-N 46 A few yds further down, see 2 "Yellowfaces", 1 Ruddy Flycatcher, together in low young scrub. Ranging 6-10 ft up. Both Flycatcher and Ruddy uttering R's "Yellowfaces" possibly following → Ruddy. This group moves on. Then, I see 1 or 2 B. nigrocrinitatus in scrub the other birds have just left. Apparently not following

46 10:13 a.m. Down by road. See group of PR Allapates in thick low second growth. Uttering "secret" notes. Ranging 3-6 ft up. There is also a single cyanocephala 10 ft up in nearby tree. cyanocephala f → PR's.

Also hear Slate-throat Song 50-100 yds away. NODWA

Leaving 10:20 a.m.

COMMENT: I seem to have seen quite a lot of mixed flocks this morning. And yet, the social behavior of the birds here would

appear to be quite different from that of the birds of the Western and Central Cordilleras!

My notes on the preceding pages may be inadequate in one respect. They may not emphasize one aspect of the population here as much as it should be stressed. At all times, this morning, I could hear birds in the scrub — even when I couldn't see them. Thus the population appeared to be fairly evenly distributed — only a little more concentrated than usual in certain localities where diffuse flocks appeared to have been formed. This sort of distribution is very different from the distribution of birds in the Western and Central Cordilleras. In the Western and Central Cordilleras, one finds large, concentrated, and coherent flocks. These flocks usually are separated by "extensive" (and prolonged) "deserts" — i.e. areas apparently devoid of life. But there were no "deserts" near Agua Bonita this morning!

The environment at Agua Bonita looks very much like the forest and scrub near Telefonico #1 on the Pico de Espejo near Merida. And the mixed flocks probably are similar in both areas. Equally diffuse (and equally difficult to "recognize").

This afternoon, going to work on Guadalupe.

Cloudy. Fairly windy. Fairly cool. Start at Prime Eucalypt area. Then go up hill. Then down hill. 4:05 p.m. Region fairly low but very thick, moist scrub. Lots of bamboo. 9600 ft. See pair of *B. nigrocrinitatus* 3-4 ft up. Silent. Also hear *Atlapetes* "secret" notes in same general area. Presumably uttered by PR's (in this locality).

A few minutes later, see 1 Litta (is this the first Litta I have ever seen on Guadalupe???) and 1 White-bearded flycatcher. Same area. Moving at same elevations above ground. Both quiet. Both probably f —

→ magorotatus - Atlapetes group. Then Litta disappears. White-beard suddenly starts up hill, at a 30° to its previous course. Then I see that 1 Pseudospingus f → White-beard. Pseudospingus also quiet. I think that the White-beard and Pseudospingus probably were going away from the rest of the birds when they went up hill.

At least twice, during this period, a single Trubellus flies over group - without showing any tendency to join.

Everything quiet 4:25 p.m. Then I go a little further down path. Come across part of same group. PL. Also 2 Littas. Both quiet 4-6 ft up in scrub. PL f → Litta. Litta f → PL. Then 2 PR's appear. Apparently following → PL-Litta group. All birds quiet at first. Then PR's start to "mob" me. Lots of "SON"s. PR's hanging 2-4 ft up. Then B. magorotatus shows up. Apparently f → group. Silent. 3 ft up. Then 2 Trubellus f → group. 5-8 ft up in trees. Also quiet. Then PR's stop mobbing. Group as a whole moves on. PR's and Trubellus bringing up the rear.

This group really was very coherent! But much quieter (aside from the "mobbing") than most groups in the Central and Western Cordilleras.

It is beginning to look as if mixed flocks are more common in this region now than they were in April. Is relatively great seasonal variation in frequency of flock formation particularly characteristic of regions in which flock development is "moderate" (rather than "extreme"?).

Slight sprinkle rain 4:45 p.m.

This flock does not seem to be making very rapid progress. I can still hear Atlapetes "seccet" Notes not very far away. 4:51 p.m.

Pair of Trubellus shows up (again). 4:53. I can't tell if

(40)

they are (still) associating with the other birds or not.

Leaving 5:20 p.m.

ADDITION: A single *Dubonia* joined —→ the flock observed this afternoon. After PR's began "mobbing". Before *Forficulus* joined group. (To my recollection, this is the first time I have seen *Dubonia* in this particular area.) *Dubonia* silent. Ranging 10-12 ft up.

August 21, 1965
Guadalupe.

Arrive same place as yesterday afternoon 5:38 a.m. Getting light. Cloudy. Cool. Some miscellaneous bird sounds.

Including *Atlapetes* Whistle songs. NODWA.

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

6:06 a.m. 9525 ft. Region low thick scrub. Lots of bamboo. See mixed flock. Includes 2 PR *Atlapetes*, 2 *B. microcrinitatus*. Ranging 1-6 ft up. *B. microcrinitatus* repeatedly f —→ PR's! Birds sometimes silent. At other times very noisy. Rattles and flourishes by Warblers. "Greeting" chatter and PN's by *Atlapetes*. It is very noticeable that the 2 species synchronize their vocalizations. I.E. one species stimulates the other. In at least one case, it certainly is the PR's who stimulate the *microcrinitatus*. A single Hummer f —→ group. With R.

Then I lose sight of the group. 6:19 a.m.

Some hummingbirds are disputing among themselves 6:20.

Catch glimpses several more Black Diglossas low in scrub, various areas. All alone. Probably all Hummers.

Rain getting worse 6:29 a.m.

Dubiana still singing quite frequently. Probably same individual every time. It probably is in reproductive condition.

PR - B. microscutatus apparently (from sounds) still together, not far from where last seen.

A couple of Forcellias move thru low scrub. 2-4 ft up. Quiet. Definitely alone.

Then see a couple of Sooty Thrushes. High in Eucalypts. Alone.

Then see a pair of Forcellias alone in another Eucalypt.

See single Laf alone, 2 ft up in fern scrub. Quite silent.

7:08. Starting uphill. Hear Dubiana singing. Then 2 Dubiana fly out of low bush, region sparse low scrub. Definitely alone.

7:16. Slightly uphill. See a couple more Hummers alone. Silent.

7:23. Further up. Region slightly busier scrub. Catch brief glimpse pair White-beards. Can't tell if they are alone or not.

Rain almost stopped now. Wind has died down. Then, of course, rain starts in again — just as I reach area where mixed flock seen yesterday afternoon! Nothing much visible now. I hear both Whitebeards and B. microscutatus at different times in different parts of the area. Also catch glimpses several Black Diglossas alone.

Fog coming in 7:45 a.m.

On way back downhill, see group 2 Whitebeards and 1 Black Diglossa 2 ft up, in low thistle scrub. They probably are the Whitebeards seen earlier. Whitebeards move off. Diglossa does not follow.

8:20 a.m. Down where PR - microscutatus flock seen earlier this morning. microscutatus still around. PR's not visible. Hear Whitebeards same general area. A minute later, hear Forcellias 30 yds uphill. I doubt if this assemblage is really a mixed flock!

✓ (126)
 ✓ (127)
 See several more Hummers and at least 1 Raf alone
 Stopping observations 8:40 a.m.

COMMENTS:

I. I presume that all the "Yellowfaced" here are, in fact, White-speckled Whitestarts.

II. It is really very remarkable that Yellowbellies seem to be absent from this region. The Agua Bonita area would appear to be highly suitable for the species (judging from its preferences in the Central and Western Cordilleras). The areas on Guadalupe where I have been working also look suitable. (There is little but scrub on this particular side of Guadalupe. But Yellowbellies certainly do occur in scrub elsewhere — even if they prefer — as they probably do — forested areas.) Is the Yellowbelly primarily a species of borders or frontiers???

III. Certainly the bad weather this morning did not appear to stimulate the formation of mixed flocks.

In this connection, the nature of the bad weather this morning would appear to be particularly significant. During most of the morning (after the immediate dawn period), there was fine rain (a real drizzle) with some light patches of fog, and relatively little wind. This is just the sort of weather which I would expect to stimulate the formation of mixed flocks in the Western Cordillera (at least on Munchique). I.E. the birds here certainly do not react to weather in the same way as the birds of Munchique!!!

Gen NOTE: All my work on Guadalupe, so far, has been on the side of the mountain facing the city of Bogotá itself. I.E. the West side. This side really is quite humid. But the local fog and rains usually or all

ways seem to come from the East side. Late this morning, we took a brief drive along the road going to this East side (the road to Arouchi). This side does appear to be even more humid than the West side. Much of the vegetation appears to be impoverished second-growth (huge expanses of bamboo thicket!), but the area certainly looks as if it might be well worth a visit.

So I am going to try the area this afternoon. Arrive area 10,100 ft. 3:25 pm. Light sprinkle of rain, but little or no wind.

This is just about the highest point of the road. Actually "open" to both east and west sides.

3:40. See single sooty Thrush alone. In patch natural-looking scrub (presumably "AS") lily vegetation west side Guadalupe.

Then we group 3 ^{white} ^{throats} ⁽³⁰⁾ Whitebeards. 3-6 ft up bamboo scrub. Noisy but alone.

This area is just at the border of Paramo (with "Frailejón"-type plants scattered in it - probably different species from Western Cordillera).

Then see several more sooty Thrushes alone (there are many open, grassy, pasture-like areas around here).

Reach fog level, 10,170 ft, 3:55. Everything very quiet.

Then hear what seems to be a definite, but diffuse, mixed flock.

TH HO Hear sounds of Whitebeards, ⁽¹⁾ ⁽²⁾ ⁽³⁾ ⁽⁴⁾ ⁽⁵⁾ ⁽⁶⁾ ⁽⁷⁾ ⁽⁸⁾ ⁽⁹⁾ ⁽¹⁰⁾ ⁽¹¹⁾ ⁽¹²⁾ ⁽¹³⁾ ⁽¹⁴⁾ ⁽¹⁵⁾ ⁽¹⁶⁾ ⁽¹⁷⁾ ⁽¹⁸⁾ ⁽¹⁹⁾ ⁽²⁰⁾ ⁽²¹⁾ ⁽²²⁾ ⁽²³⁾ ⁽²⁴⁾ ⁽²⁵⁾ ⁽²⁶⁾ ⁽²⁷⁾ ⁽²⁸⁾ ⁽²⁹⁾ ⁽³⁰⁾ ⁽³¹⁾ ⁽³²⁾ ⁽³³⁾ ⁽³⁴⁾ ⁽³⁵⁾ ⁽³⁶⁾ ⁽³⁷⁾ ⁽³⁸⁾ ⁽³⁹⁾ ⁽⁴⁰⁾ ⁽⁴¹⁾ ⁽⁴²⁾ ⁽⁴³⁾ ⁽⁴⁴⁾ ⁽⁴⁵⁾ ⁽⁴⁶⁾ ⁽⁴⁷⁾ ⁽⁴⁸⁾ ⁽⁴⁹⁾ ⁽⁵⁰⁾ ⁽⁵¹⁾ ⁽⁵²⁾ ⁽⁵³⁾ ⁽⁵⁴⁾ ⁽⁵⁵⁾ ⁽⁵⁶⁾ ⁽⁵⁷⁾ ⁽⁵⁸⁾ ⁽⁵⁹⁾ ⁽⁶⁰⁾ ⁽⁶¹⁾ ⁽⁶²⁾ ⁽⁶³⁾ ⁽⁶⁴⁾ ⁽⁶⁵⁾ ⁽⁶⁶⁾ ⁽⁶⁷⁾ ⁽⁶⁸⁾ ⁽⁶⁹⁾ ⁽⁷⁰⁾ ⁽⁷¹⁾ ⁽⁷²⁾ ⁽⁷³⁾ ⁽⁷⁴⁾ ⁽⁷⁵⁾ ⁽⁷⁶⁾ ⁽⁷⁷⁾ ⁽⁷⁸⁾ ⁽⁷⁹⁾ ⁽⁸⁰⁾ ⁽⁸¹⁾ ⁽⁸²⁾ ⁽⁸³⁾ ⁽⁸⁴⁾ ⁽⁸⁵⁾ ⁽⁸⁶⁾ ⁽⁸⁷⁾ ⁽⁸⁸⁾ ⁽⁸⁹⁾ ⁽⁹⁰⁾ ⁽⁹¹⁾ ⁽⁹²⁾ ⁽⁹³⁾ ⁽⁹⁴⁾ ⁽⁹⁵⁾ ⁽⁹⁶⁾ ⁽⁹⁷⁾ ⁽⁹⁸⁾ ⁽⁹⁹⁾ ⁽¹⁰⁰⁾ ⁽¹⁰¹⁾ ⁽¹⁰²⁾ ⁽¹⁰³⁾ ⁽¹⁰⁴⁾ ⁽¹⁰⁵⁾ ⁽¹⁰⁶⁾ ⁽¹⁰⁷⁾ ⁽¹⁰⁸⁾ ⁽¹⁰⁹⁾ ⁽¹¹⁰⁾ ⁽¹¹¹⁾ ⁽¹¹²⁾ ⁽¹¹³⁾ ⁽¹¹⁴⁾ ⁽¹¹⁵⁾ ⁽¹¹⁶⁾ ⁽¹¹⁷⁾ ⁽¹¹⁸⁾ ⁽¹¹⁹⁾ ⁽¹²⁰⁾ ⁽¹²¹⁾ ⁽¹²²⁾ ⁽¹²³⁾ ⁽¹²⁴⁾ ⁽¹²⁵⁾ ⁽¹²⁶⁾ ⁽¹²⁷⁾ ⁽¹²⁸⁾ ⁽¹²⁹⁾ ⁽¹³⁰⁾ ⁽¹³¹⁾ ⁽¹³²⁾ ⁽¹³³⁾ ⁽¹³⁴⁾ ⁽¹³⁵⁾ ⁽¹³⁶⁾ ⁽¹³⁷⁾ ⁽¹³⁸⁾ ⁽¹³⁹⁾ ⁽¹⁴⁰⁾ ⁽¹⁴¹⁾ ⁽¹⁴²⁾ ⁽¹⁴³⁾ ⁽¹⁴⁴⁾ ⁽¹⁴⁵⁾ ⁽¹⁴⁶⁾ ⁽¹⁴⁷⁾ ⁽¹⁴⁸⁾ ⁽¹⁴⁹⁾ ⁽¹⁵⁰⁾ ⁽¹⁵¹⁾ ⁽¹⁵²⁾ ⁽¹⁵³⁾ ⁽¹⁵⁴⁾ ⁽¹⁵⁵⁾ ⁽¹⁵⁶⁾ ⁽¹⁵⁷⁾ ⁽¹⁵⁸⁾ ⁽¹⁵⁹⁾ ⁽¹⁶⁰⁾ ⁽¹⁶¹⁾ ⁽¹⁶²⁾ ⁽¹⁶³⁾ ⁽¹⁶⁴⁾ ⁽¹⁶⁵⁾ ⁽¹⁶⁶⁾ ⁽¹⁶⁷⁾ ⁽¹⁶⁸⁾ ⁽¹⁶⁹⁾ ⁽¹⁷⁰⁾ ⁽¹⁷¹⁾ ⁽¹⁷²⁾ ⁽¹⁷³⁾ ⁽¹⁷⁴⁾ ⁽¹⁷⁵⁾ ⁽¹⁷⁶⁾ ⁽¹⁷⁷⁾ ⁽¹⁷⁸⁾ ⁽¹⁷⁹⁾ 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Ref Also a light grey regular stripe. This bird also "mobs" me. Its noises attract a single *Ref*, which flies into adjacent bush. Silent. *Ref* flies on almost immediately. Then *Synallaxis* gradually moves off.

I imagine that the "real" part of this flock included approximately 8 individuals.

Parts of this area look very much like the highest area worked on Purse!

Ref 4:40 pm On way back toward road. See single *Ref* in thick bush beside path. Silent. Panging 6-10 ft up. Puffing insects off leaves. Down in the bottom of same bush, can hear *formicid(s)*. Quite noisy. *Ref* doesn't appear to be paying any attention to the latter. Then I see a pair of *PR's*, 50 ft away, in region bamboo scrub with scattered *AS* bushes. *PR's* ranging 2-12 ft up. Sometimes moderately noisy. Usually quiet. Then the *PR's* fly quite far away. Into region tall *AS*. Neither *Ref* nor *formicid(s)* follow. A few moments later, hear Whitebeard sounds from area to which *PR's* flew.

How much (if any) of this was "real" flocking is very dubious. If all or part of this assemblage was a flock, all or most of it was very cliff use.

5:01. Region very mixed second growth & Eucalyptus (a species I have never seen before). See pair Whitebeards 6-15 ft up. Alone.

Leaving 5:20 pm.

COMMENTS:

I. It is beginning to look as if this series of observations will confirm both my previous impressions of the sociability of the birds here. I.E. mixed flocks are not uncommon, but neither are they nearly as common as in the Western and Central Cordilleras.

Jan II. I am gradually coming to the conclusion that Guadalupe, as a whole, is about as humid a region as any I have ever worked in. Only it has less tall forest ("VSF"-type) than some other regions.

III. It has just occurred to me that White-spectacled Whitestarts are relatively rare, or absent (?), at relatively high altitudes here. The absence of real Yellowfaces, or the ecological equivalent thereof here may go far to explain the relatively poor development of mixed flocks here. (Similarly, the relatively poor development of mixed flocks here may go far to explain the absence of Yellowfaces.)

See also Merula notes, Sept. 1965

August 22, 1965
Paríamo de Guasca

Going to work in usual place here. Arrive 5:28 a.m. Still quite dark. Cloudy. Already some bird sounds. Probably thrush songs.

Thrushes singing quite steadily 5:35 a.m. Obviously in reproductive condition. There also are a few other bird sounds now, but nothing very much yet.

The vegetation here seems much as it was a few months ago. I.E. the burned areas do not seem to be growing up very fast.

Hear first Atlapetes Whistle Song (1 phrase) 5:44. NODWA, but completely overlapped by thrush songs.

Everything much quieter 5:50 a.m.

There is fog just above road level now. Gradually coming lower!

More Atlapetes Whistle songs 5:54. NODWA.

See a single Taffly fly. Silent and alone.

5:58. See single P2 Atlapetes singing Whistle songs. Perched 3 ft

Feb

Hummer

up dead scrub, close to unburned patch. NOBWA. Then Hummer starts to sing some distance down road. PL and Hummer alternate song phrases. Again and again and again. Usually, no overlap. Occasional slight partial overlap. (Song pattern of this PL quite like usual pattern referred to as near Quito. Slight CR.) Hummer shuts up. PL continuing 6:02 PL song completely overlaps Towbill's in distance.

3

Then Towbill j —————> PL! Then Sooty Thrush j —————> group (apparently only to "mob" me). PL stops singing and moves off a few feet. Both Towbill and Sooty also move off. Apparently not together. And apparently not followed by PL.

Feb

6:06. Hear Laf song in distance. Also more Attapetes (presumably PL) Whistle songs. Completely overlapping! Repeatedly. Laf shuts up. Attapetes continues. Attapetes shuts up. Laf sings again. No overlap. Laf shuts up. Attapetes starts to sing again.

Can

It is cold now. Also wind is coming up a little. Hear what sounds like Can song. "Seeee" Intro Notes. 6:08.

Feb

Alternating with Attapetes Whistle songs. No overlaps.

Can

See single Laf alone. Silent. 3 ft up in AS.

Both Can and Attapetes silent now. 6:12 a.m. Then Attapetes starts again. NOBWA.

Feb

Fog lifting a little 6:15 a.m.

Then Laf sings again. Completely overlapping several songs of several Attapetes (PL's).

Can
Hummer

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI

6:58. Watching Cy, and listening to both Cy and Hummer. Ridge on burnt scrub, with some low new growth coming in. There is a pair of Sooty Thrushes, alone, giving alarm notes at me. Then a pair of PR

Hummer

's appears. Usually silent. Occasional noisy greetings. Moving c. 2' up thru new growth. Obviously essentially alone (Altho the thrushes, Cy and Hummer certainly are in same neighborhood, it is obvious that none of the species is really reacting to any other.)

17:05. Near Dubuque. Song further down road. Far away. Going down in this direction myself.

8:45 a.m. For the last hour, I have been walking around the area where a big mixed flock is usually seen. I have seen a lot of Diglossas (described elsewhere). Also a lot of Sooty Thrushes alone. And I have heard some Trill-like sounds. But that is all! Has the flock been "suppressed" by the cold today??? (Incidentally, the vegetation at this particular site seems essentially unchanged from my previous visit.)

Hummer

Hummer

No sooner said than done! I start back up road. And immediately come across flock. 9:22 a.m. Includes "permanent" nucleus of 1 Blue & Orange, 1 Cy, 1 Empidonax-type, and 2 PL's. Moving thru both burned and unburned scrub. First 3 species ranging c. - 12 ft up. PL's ranging from ground to 4 ft up. PL's occasionally noisy. Other birds quiet. Cy utters 1 song phrase (completely overlapping Laf - see description elsewhere). There also is 1 Trill-like with group, but only for a few seconds or minutes. Group also is escorted by 1 Hummer, and 1 or 2 Laps, for at least several minutes. (The Black Diglossas with group are difficult to follow well, because group arrived just in the middle of a complicated series of encounters between Laps, and between Laf(s) and Hummer - see description elsewhere.)

The Blue & Orange was in the lead of this group all or most of the time. The PL's certainly brought up the rear guard all the time. The "order" of the species was revealed most clearly when the group flew across

(M) fel is the road. Blue & Orange went first. Cy f → Blue & Orange.
 Left f → group. Euphonia-type f → group. And the PL's
 came last.

Leaving 9:30 a.m.

COMMENT. It would appear that the mixed flock situation is
 even now is pretty much what it has always been. The Allogregarious
 behavior of the species here seems to be quite stable. (This may contrast
 with the inter-specific reactions of various Diglossini, which may be quite
 variable.)

August 23, 1965
 Agua Bonita

Going to work the same place as on August 20th. Arrive 5:
 23 a.m. Still dark. Partly cloudy.

Quite a lot of bird sounds by road 5:35 a.m. Including both
 Albi-type R's and Baukaterus-type R-Flourishes. These two types of
 vocalizations are not overlapping. R-Flourish usually comes immediately
 after Albi-type R. Sounds very much as if the Baukaterus-type is "answer-
 ing" the "Albi-type"!!!

White-spectacled Whitestarts also singing quite frequently. Ap-
 parently overlapping both Baukaterus R-Flourishes and Albi-type R's
 quite at random.

Then, 5:41, hear long series Atlapetes torquatus-type Whistles
 Overlapping all other types of vocalizations!

5:50. Hear what may be Slate-throat Song. Overlapped, at least
 occasionally, by White-spectacled Song!!!

see below

Open

In the absence or "break down" of mutual song inhibition characteristic of most species of the Eastern Cordillera as a whole???

There really is a great volume of all sorts of bird noises by 5:55. Then things begin to quiet down 5:59.

Albi?

Albi-type R's and slate-throat-like songs certainly overlapping at least occasionally. Also White-spectacled and slate-throat-like songs.

17

6:02. See "White-spectacled" singing 20 ft up in tangle second growth vines. This bird seems to have whole cheeks white! (I think that's one of the "White-spectacled" seen the other day were similar. Perhaps this feature is characteristic of the whole population.)

Albi 19

Various Dubung and Trubelly sounds overlapping everything. 6:09. See single Albi feeding clusters small white flowers 10-15 ft up in second growth tangle. Utters R's from time to time. Definitely the "Albi-type" R's heard earlier. And these R's overlaps slate-throat type c songs.

23

With glimpse 3 White-tails chasing one another. Alone. From sounds, they are slate-throats.

6:30. Lots of birds audible various places in scrub. But, as usual, impossible to see adequately.

Lots of White-spectacled songs now. NOBWA

54

6:40 p.m. See "semi" or "pseudo" mixed flocks. "Nucleus" is group of 3 individuals which appear to be Basileuterus luteoviridis Yellow supercilioses and olive crown stripes. Very noisy (see below).

54

Then birds ranging 3-12 ft up in second growth scrub. At one time, they are only a few feet from 1 or 2 microcratus. Also noisy. At other times, there are a single White-headed and a single White-spectacled.

in trees above them. But none of these species shows any tendency to follow any other. All separate and go their separate ways almost immediately.!!!

Incidentally, I am now almost certain that at least some of the "Slate-throat-like songs" heard this morning were uttered by the B. luteoviridis-types.!!! They seem to utter very slate-throat-like short series descending notes. But these often are preceded by typical Bardot crus R's.

(Nevertheless, I am quite certain that there are Slate-throats around here. I saw at least 1 individual, alone, 20 ft up in small tree, earlier this morning.)

The altitude here is 7600 ft.

See a couple of Fulvices fly over head. Alone. Uttering "PN"s.

Going to start up hill 7:15 a.m.

7:25 a.m. A few hundred yards up path. 7675 ft. Hear B. lute

oviridis types in scrub some distance away. Also hear microcrinatus

And see a single White-beard and a single Cy (not together) flitting about in trees, 10-20 ft up, not far away. All or most of these individuals almost certainly the same as the individuals seen more or less together down hill earlier. Thus, it seems likely that this group really is a mixed flock. But, if so, it is remarkably diffuse.

(Again) the Cy and the White beard go off apparently in different directions?

7:45 a.m. Still hear White-petailed songs and Albi R's from time to time. Not overlapping.

7:55. Further up. See pair B. microcrinatus. Moving but apparently alone. 3 ft up in second growth tangle.

I wonder why there seem to be few or no Tangaras around here?
See a single sooty Thrush. Silent and alone.

4/10

176

171

8:15 a.m. 17825 ft. Region of very mixed scrub. Lots of bamboo and lots of everything else. Fairly low on the average. On very steep slope. Come across definite mixed flock. The central "nucleus" of the group (although almost certainly not the leaders — not in front) is composed of 3 or 4 "Baileuterus luteoviridis"-types. Possibly the same as the "B. luteoviridis" seen down hill earlier. But I got a particularly good look at the birds here this time. And I am almost certain that they are Hemiprocne, not Baileuterus. Hemiprocne shape and bill. Also in the flock is at least 1 H. atripileus, and 1 H. melanotos. A real Hemiprocne flock!

All these birds ranging 1 - 6 ft up in scrub. Usually low. Quite coherent. Also quiet, uttering only "cn"s — until they see me — when the "luteoviridis" types begin to "mob".

172

When flock appears, I also hear Trubelly (us) nearby. Can't tell if it (or they) really associated with flock or not.

The atripileus and/or Trubelly (us) probably in lead.

WT

173

A single White-throated Hummingbird (identification definite) "mints" flock. Feeds on tubular red flowers. Same species favored by Albi! But (this time) hummingbird sticks bill up center of flower. Definitely does not use Diglossa holes!

Albi 174

Hummingbird disappears almost immediately. A second later, ♀ Albi shows up! Also feeds tubular red flowers — in usual Diglossa style. This ♀ Albi "escorts" flock for some minutes at least. Silent the throughout.

175

While flock is around, I also can hear White-spectled White

start flying about 20 yds away. But this White rumped certainly
was there before flock appeared. Flock is going in its direction. But I
can't tell if they join or not.

3) 8:50. Same area. Small group 3 birds appears. Apparent
by ~~W~~ of the "lutovordis"-types which were with flock earlier. But now
they certainly are alone.

SEE ALSO NOTES ON MIXED DIGLOSSINI!

9:15 a.m. 17925 ft. Region of high mixed scrub. See single PR
Atlapetes. Silent and definitely alone. 2-3 ft up.

9:23 am 8000 ft. Come across what seems to be another small mixed flock. See 2 Little Striped Flycatchers in scrub. 8-12 ft up. Inter occasional R's, but not many. Then get bad view of 2-4 other birds up in trees 25-35 ft away. The only one I can identify is a young White-tailed 15-25 ft up. Silent. Also can hear presumed Ngung (NODWA) occasionally in neighborhood.

This flock seems to be both quiet and diffuse. In fact, almost
all flocks in this region seem to be quiet and/or diffuse!!!

84 9:36 a.m. Same area. Hear what sounds like both "cutcovered
is"-types and ingrocrutatus in scrub where Little Striped Flycatchers were
earlier. Then hear more presumed Ag Song. Without Intro Notes. NO
DNA. Everything else seems to have gone.

Starting downhill 9:42 a.m.

10.01. 7480 ft. See single White throat feeding clusters large
red tubular flowers. Not using Diglossa holes. Silent. Can also hear
other birds (White heads? microcratus?) in nearby scrub, but co
n't see them.

10:14 Down by road. Hear more Albi-type R's. NODWA

Leaving 10:20 a.m.

COMMENT: This morning's observations would seem to confirm my impression that *Alloreganensis* behavior is very stable in this area. (And again, I heard lots of birds — mostly uttering "CN"s — which I was not able to see.)

August 24, 1965
Paramo de Guasca

Going to work usual places here. Arrive 5:27 a.m. Still dark. Semi-fog and/or light drizzle. No wind. Relatively warm.

Shrikes already singing when we arrive. A lot of them and quite loud. Everything else silent. A few other bird sounds (miscellaneous) begin 5:33. Then everything rather quiet 5:40.

Incidentally, the altitude, where the car is parked, is 9800 ft according to my altimeter now.

Then more bird noises. Now working where Laf, Coer, and P & Attapetes were heard overlapping a couple of days ago. Attapetes utter Whistle songs 5:45. NODWA. Then shuts up.

Coer Laf starts to sing 5:47. NODWA. Shuts up. Then presumed Coer starts to sing NODWA. Shuts up. Then Laf and presumed Coer alternate on one matches of song. No overlaps and NODWA!!!

Everything rather quiet 5:54 a.m.

Laf Then more Laf song NODWA. Laf shuts up.

6:00 a.m. A few more Attapetes Whistle songs. NODWA.

Fog getting thicker and rain less now.

Gen In general, there is less "dawn chorus" today than the day before.

today.

Atlapetes still singing quite steadily 6:04. And still NODWA. Bird presumably is CR. I can't see it, but it certainly is going from bush to bush, singing at different perches. Its Whistle songs occasionally overlap faintly, sounds in distance. Apparently at random.

Then presumed Coer starts to sing again. Alternates phrases with Atlapetes. No overlaps!!! Alternation very regular.

So there is considerable variation in timing of song behavior!

Presumed Coer shuts up. Atlapetes continues NODWA. Then shuts up temporarily, 6:17 & up. Starts again 6:19. Still NODWA.

A single Towhee flies by alone. Also several Sooty Thrushes silent and alone.

Atlapetes shuts up again 6:23. Everything very quiet. I am going to start walking down road.

See 2 Jays in bush AS. Both fly away. Land 30 ft away. Then one sings a long phrase. NODWA. Shuts up.

A minute later, hear more presumed Coer songs up road in usual Coer area. And this time, I manage to see the bird. It definitely is Coer. Going from bush, 4-10 ft up. Apparently picking insects off leaves. Songs definitely NODWA. Coer flies off. Then Jay sings. NODWA. Shuts up.

Coer and Jay territories are (still) at least partly overlapping here.

Of course, mutual song inhibition may be "working" here today largely because none of the species is singing very frequently.

Rain more again 6:30.

6:33 Atlapetes uttering Whistle songs again. Again NODWA!

Then Jay starts to sing. Long series notes. And now - complete

by overlapping Attapetes songs! (Laf must overlap at least 20 Attapetes phrases.) Then both birds shut up.

14 Going down road 6:40. See single PL Attapetes. Silent. 2 ft up in burnt scrub. Apparently alone.

Cy
Hummer
15

Then the PL moves into adjacent low, thick unburnt scrub. And I see that there are 2 Cys and 1 Hummer (definite) only a couple of feet away! 1 Cy and the Hummer are feeding in same bush, only a few (3-6) inches apart!!! Hummer quite silent. Shows absolutely no indication of hostility toward Cy!!! One or both Cy(s) is (are) singing very frequently. Typical Cy Swallows with "Tut" Intro Notes. I suppose that some or all of these songs may be partly or completely hostile. But aside from this, the Cys do not show any overt indication of hostility toward the Hummer!!!

Cy
Hummer
16

Then both the Cys and the PL move back into burnt scrub. Cys fly → PL. Hummer shows no tendency to follow or join either of the other species. Then PL flies back into unburnt scrub (in general direction of where Hummer must be). Cys do not follow. Cys continue on, covering a very large area of both burnt and unburnt scrub. Still singing very frequently. NO DUET. All songs long Swallows with "Tut" Intro Notes. Usually given when the two birds are several feet apart from one another. But also given, occasionally, when they are very close together - 1" to 2" apart. (It is interesting that "Tut"s are given in the latter circumstances.) As far as I can tell, Cys are feeding on insects, on leaves and twigs, throughout. (But certainly the Hummer fed on small red flowers when it was very close to the Cys.)

Cy
Hummer

Cy
Laf
17

Eventually, Cys move into Laf territory (the Laf whose territory overlaps Cy's). Laf not visible or audible at the time. Cy(s) still singing. Then Laf suddenly appears in bush only a few inches from one Cy. Laf just

nts. Silent. Makes no overt attempt to attack or supplant Cy. But Cy
flies off within a couple of seconds. Followed by mate.

Both fly off into tree 30 ft away. Still singing. This is tree in which I saw Coer earlier this morning. Coer not visible now. But then, suddenly Coer inserts one typical song phrase between Cy songs. No overlap. From sound, Coer is 40-50 ft away from the Cys at the time.

Then Cys fly off and disappear.
So Cy territories or ranges (still) overlap those of Hummer, Laf, and Coer!!!

The close approach of different species to one another, without overtly hostile movements, during these incidents is quite reminiscent of the Sierrita de Munda!

Going back down road, after disappearance of Cys, I see single PR silent and alone in (another) patch of burnt scrub. Probably same individual seen earlier. It is in the exact same spot where I saw a couple of PR's two days ago! PR's were also alone at the time. So PR and PR territories or ranges are at least partly overlapping, even when the two species are not associating with mixed flocks.

7:00 a.m. Further down road. More Lofs singing NOBWA. Then see a couple more sooty Thrushes alone.

7:12. See single large hummingbird feeding tubular red flowers edge road. Not using Diglossa holes. This probably is the same species seen supplanted by Laf a couple of days ago. It certainly is not Patagona (Patagona apparently does not occur in Colombia.) In fog, it looks dark green all over. Could it be the "Blue wing" ???

See a single Laf. Silent and alone 2 ft up unburnt scrub. Then see a single Towheebird alone in burnt scrub. 7:26 a.m.

Cy

Then hear a whole series typical Cy songs. NODWA

Sag getting very thick 7:30 a.m.

Full group of at least 5 sooty Thrushes in burnt scrub. Alone.

It looks as if the sooty Thrushes here may form "monospecific" flocks in sag. (Did I see them form flocks in bad weather a couple of months ago?)

Laf
Coer
Cy
Hummer

More Laf song in distance. NODWA. 7:35. Laf shuts up. Then I hear Coer songs in distance. NODWA. Coer shuts up. Then I hear Cy songs nearby. NODWA. Cy shuts up. Then I hear Hummer songs. NODWA. Hummer shuts up. This really is too good to be true !!!

Hummer

Then see 2 Hummers moving thru scrub fairly close together. Some R's. No Zaza's.

24

See single Laf alone.

Laf
Hummer

25

Then see a couple of Lafs alone. Silent. Feeding red tubular flowers. Both Lafs and Hummers seem to feed on this species of flower very frequently.

Cy
Coer

24

Then see single Cy. Silent and alone. Picking insects off leaves of tree, the same species favored by Coers!

Cy
Hummer
Laf

Competition here must be intense !!!

Then some more Cy and Hummer songs. Not overlapping. Both shut up. Then there is more Laf song. NODWA. Laf shuts up.

7:58 a.m. God! There seem to be lots and lots of sooty Thrushes around everywhere !!! All alone.

Cy

See another single Cy. Silent. 10 ft up in bush. Region of partly burnt scrub. I also can hear B. nigrocrinitatus Rattles & Flourishes in low new growth about 20 ft away. Cy flies away. The warblers do not follow.

It really is quite remarkable that there doesn't seem to be a single Whitetail in this area!

8:15 a.m. See single maroon-vented mountain catbird. Silent and alone. 10 ft up unburnt scrub.

Fal *Hummer* *3/6* NOTE: I have seen at least 4 or 5 Laps, and 4 or 5 Hummers, all alone, which I have not bothered to record in my field notes.

Gen COMMENT: Today's observations certainly have confirmed our point!!! Light fog and/or drizzle, without wind, certainly discourage the formation of mixed flocks by birds of the Eastern Cordillera!!!

SEE ALSO TODAY'S NOTES ON MIXED DIGLOSSINI.

Leaving 8:55 a.m.

NOTE: The behavior of the Whitestart, Myioborus ornatus (both Yellow-faced and Whitespectled), in all three cordilleras of Colombia and the Sierra de Mérida, seems to be a particularly good example of the "geographical" trends which seem to be characteristic of this group of regions. The difference between the birds of the Western and Central Cordilleras, on the one hand, and those of the Eastern Cordillera and the Sierra de Mérida, on the other, is extreme.

Going to work on Guadalupe this afternoon. At the lower place where I worked before on previous trips. (The car is parked at 9200 ft according to my altimeter now). Arrive 3:18 p.m. Partly cloudy. Partly sunny. Some wind.

Scam Hear something that sounds like Scam "Chuk" song in scrub near road 3:22.

Then see group 3 PR Atlapetes. Silent and alone. 1-3 ft up, low in + thick scrub edge rock slide.

Black 3:30. Catch glimpses various Black Diglossas, all alone, in scrub. Without being able to identify them.

Gen There seem to be quite a lot of hummingbirds around, including

g some green Eucosmidae and/or Haplophastria.

Black
Cy

More Black Diglossas! Also alone. Silent. Then a single Cy fly. Alone. Uttering "Treet" Notes in flight.

9310 ft. Region of very mixed scrub. Including bamboo. A pair of Plush-capped Todies fly. Silent and alone.

Black
Cy

9400 ft. 3:45 pm. See what may be mixed flock. Group includes at least 2 Blue Diglossas (probably Cys), 1 Trochilidae, possibly others. Quiet and diffuse.

VB

About 50 ft away, I also see one VB Hummingbird. ♀ or juv. ♂ (Breast whitish, but an appreciable amount of violet on back). Feeding clusters small white flowers. Silent. Apparently not reacting to other birds.

Scam
Hummer

3:55. Some Scam-type "chuck" song in distance. Nothing else audible at the time. Then hear some Hummer R's. Completely overlapped by Scam "chuck" song. Then I hear R-Twitter. Also completely overlapped.

4:02. A few yards further on. See single Synallaxis. Probably sub-judica. Quiet. 3 ft up in second growth scrub. Apparently alone.

There certainly doesn't seem to be any great "concentration" of mixed flocks in the afternoon here!

Black
Cy

4:07. See group 2 Trochilidae and 1 Cy 20 ft away. Silent. 6-10 ft up in scrub. Probably largely same group seen earlier.

Black
Cy

4:10. 30 yds further on, see another very quiet and diffuse small group. Includes at least 2 Trochilidae, 1 PR Atlapetes, 1 White-beard. All 4-12 ft up in scrub. PR j → Fairybill.

Black
Cy

4:25. Same area. See another Black Diglossa. Silent and alone.

Scam

4:30. Still a lot of Scam "chuck" song from time to time. Still nothing else, of interest audible at the same times.

4:48. Starting down hill.

Hummer

See a single Hummer silent & alone. Feeding on white cup shaped flowers 3 ft up very young scrub

Rain starting 4:50 p.m.

WS
extra
WS

4:52. See group 2 adult Ays. Also 1 other bird which probably is sub. Cy. Feeding small berries 6-8 ft up small tree. Quite silent. Just a second before, I heard Trubell sounds same tree. I am fairly certain that this is same Cy-Trubell flock seen earlier this afternoon. Ays eventually fly off. Almost certainly \rightarrow Trubellies. This Cy-Trubell flock would appear to be quite long-sustained.

Scan

Scan-type "chuk" song still continuing 5:02. Still nothing else of interest audible.

Leaving 5:30 p.m.

August 25, 1964
Bogota

Going to work in University gardens again this morning.

4:38 a.m. Good heavens! I see what appears to be single OT Crimson-rump Tanager (same species as in Panama) alone in garden of the Pharmacy Dept.

This afternoon going to work same place as yesterday afternoon. Arrive 3:10 p.m. Pretty cloudy. Pretty sunny.

Lots of wren and B. nigrocrinitatus noises near road. Then quite t, 3:14 p.m. Then more wren noises.

WS

3:17. A single G flies by alone. Uttering "Isset" notes.

3:21. Another single G flies by alone. Uttering similar notes

WS

And then a third. All within a few yards of the same site!!!

Then see a single Eurocranius or Haplophastria type alone. Silent. White blue rump and/or tail.

Black Then catch glimpses of a couple of Black Drymonas alone. The Drymonas population here now is as thick as anywhere I have ever been!!! (Apart from real "flocks" in such places as the Prunus Eucalypts.)

3:37. See single Trochiloides not far from road. 3 ft up scrub. Apparently alone. Apparently juv. (very pale underneath). Then see that there are 2 Trochiloides here. One certainly adult. Also hear B. macrocratus near by. Both Trochiloides very quiet. Trochiloides fly off. Apparently nothing follows.

It is beginning to look as if this may be the end of the breeding season for all sorts of things! Young out of the nest. (How does this jibe with my observations in September and October, 1962???)

Red More Black Drymonas alone 3:50 p.m. At least one of these certainly is Red.

9300 ft. 4:03 p.m. Another couple of Trochiloides fly by. Alone.

Hummer 4:20 p.m. A few yards further up hill, see single Trochiloides. Quiet and alone. 4 ft up second growth. Single Hummer → Trochiloides. Obviously something. Feeds flesh-colored tubular flowers. Silent. Trochiloides flies off. Hummer does not follow.

Hummer Then fly flies by, 15 ft from Hummer. The two birds apparently do not react to one another.

Starting down hill 4:27 p.m.

Hummer 4:31. See single adult Blue & Black. Silent. 2 ft up in scrub. On a few feet from it is single gray bird. Might be juv. Blue & Black. But looks very appreciably larger than adult. I also hear some sounds of at least 1 other species nearby (PR??). I think that this should be classified as a mixed flock. But certainly a small one!

4:48 pm Down by road see a couple of *Trochilurus* (again). (Again apparently alone.)

NOTE: One might expect mixed flocks to be most common during period more or less immediately after young have left nest. But this certainly does not seem to be the case here.

August 26, 1965
Alqua Bonita

Going to work in the usual places here. Arrive 5:27 a.m. Still quite dark. Partly cloudy. Looks as if it might rain.

Some bird sounds (*Atlapetes torquatus* Whistles?) 5:31. Then a variety of bird sounds.

Alb? First Albi-type R's 5:40 a.m. NODWA. Quite a lot of R's in rapid succession. I rather imagine that the Albis here are in breeding condition. Then a lot of White-spectacled Song. Completely overlapping the Albi-type R's. Then both species shut up. Then I hear some Slate-throat-type Songs (Probably real slate-throats.) NODWA. Then some more Albi-type R's. Probably partly overlapping slate-throats. (But the individuals of the two species are far apart.) Then slate-throats shut up.

Alb? Albis continue quite frequently. Occasional White-spectacled Song, completely overlapping Albis.

Also a variety of *B. nigrocapitata* and *Luteoviridis*-type sounds. Apparently not overlapping one another. But probably overlapping everything else at random.

5:58. See a single thrush. Silent and alone. Apparently about 20 ft up top tall second growth tangle.

Albi
32

Albi silent 6:01. Hear everything else continuing.

See pair White-spectacled. Flitting about in tall cypresses. 20-25 ft up. Sometimes only a few feet from where I can hear Euteocharis-type song. Is But then White-spectacled fly on. And Euteocharis-types apparently do not follow. CORRECTION? Euteocharis-types do start to drift over in same direction as White-spectacled. But the two species apparently not very close together. Another diffuse flock?

Albi
34

6:10. See single ♂ Albi alone. 3 ft up in scrub. Utters R. R. flies off. R not overlapped by anything else.

Albi

Then hear more Albi R's in neighborhood. Sometimes alternating with White-spectacled songs. Sometimes overlapping.

Everything getting quiet 6:18 a.m. There are occasional drops of rain.

35

See single White-throat feeding clusters tubular yellow-flowers. There are certainly are some other birds (microcrantus and torquatus?) in scrub not far away. But I don't know if this is flock or not.

37

Then see pair B. microcrantus. Ranging 2-6 ft up thick second growth scrub. Quiet. Apparently alone.

Rain getting heavier!

Albi
38

During rain, single ♀ Albi appears in scrub about 15 ft from the microcrantus. Silent. Moves on, apparently without paying any attention to the warblers (or vice versa).

More torquatus-type Whistles 6:29. Overlapping some Diglossini Twitter in distance. Coer ???

Starting uphill 6:30, as rain is getting lighter.

Coer

Just as I go, hear unmistakable Coer in distance. NO DWA part of the time. But also completely overlapped by White-spectacled songs.

at other times.

Clear continues. Completely overlaps 1 Albi R.

Birds in general were fairly quiet during rain. And apparently taking shelter. Certainly no obvious tendency to congregate in flocks.

But now they are becoming noisy again as rain stops.

6:39 a.m. Still down not far from road. Single cyanocephala flies by. Definite, alone. Lands in tangle 25 ft up. Still alone. Then flies off.

Starting uphill (again) 6:41 a.m.

Just a few yards along path. See pair White-spectacled. In all trees, 10-20 ft up. Also can hear lutiviridis-types in scrub a few feet away in one direction. And microcrinitatus in scrub a few feet away in another direction. White-spectacled sing occasionally. Overlap song both warblers (which are not, however, overlapping one another).

6:50. A little further along path, 76-75 ft. Come across what is certainly partly same group. See 2 White-spectacled. Hear both lutiviridis types and microcrinitatus. Also see 1 cyanocephala, and 1 Chlorospingus canicularis. Tanagers and White-taileds in trees, 15-20 ft up. Warblers low in thick scrub. cyanocephala f → White-spectacled. White-spectacled possibly leading group as a whole. microcrinitatus apparently bringing up rear. But definitely appearing to follow group as a whole very noisy and apparently quite coherent!!!

7:02 a.m. Near Dubuna Longin Distance.

7:30 a.m. Region where "Jurnal Hemispinus" flock seen a couple of days ago. See single microcrinitatus 2 ft up in bamboo scrub. There probably are other birds nearby, but I can't see them.

7:35 a.m. A few yards further on Ca. 7900 ft See definite mi

WCC 97
WT 103
WCC 104
106
Mixed flock includes at least the following 3 GT's, 1 WCC (white-capped), 1 WCC, 2 White-spectacled, 1 Ruddy Flycatcher, 1 H. atropurpureus, and 1 White-throated Hummingbird. All these species were seen. Cy and 1 or more luteoviridis types also were heard.

WCC
WT
This is region of scattered tall, mature, VSF trees and miscellaneous scrub. GT's ranged from 30 ft up in trees to 10 ft up in scrub. WCC's seen only 20-30 ft up in trees. White-spectacled have approximately same range as GT's. Ruddy Flycatcher 0-10 ft up. H. atropurpureus seen only 20 ft up in trees. White-throat flying about, 4-20 ft up Cy certainly in trees. luteoviridis-types certainly low in scrub.

WCC
WT
Group as a whole quite diffuse, most of the time. But GT's & WCC's. White-spectacled & group of WCC's and GT's. The WCC's and Cy certainly were not associating particularly closely with one another.

WCC
WT
GT's certainly eating fruit. WCC's picking insects off leaves. Ruddy and White-spectacled Flycatching.

WCC
WT
Group as a whole quite quiet most of the time. But all or almost all species vocalized occasionally. Both Cy and White-spectacled sang. Not overlapping.

WCC
WT
Group moving steadily, but very slowly, in one direction. As group passes thru one area, I hear B. nigrocrinitatus sound low in scrub. But I am not sure that these nigrocrinitatus were really associating with group. Possibly only manifesting their hostility.

WCC
WT
Group disappears downhill 8:10 a.m.

WCC
WT
8:35 a.m. 8075 ft. Region where highest mixed flock seen a couple of days ago. See another mixed flock. Includes at least 5 or 6 All-rufous Synallaxis and 3 or 4 B. nigrocrinitatus (this may be near boundary).

my two pairs of these warblers) All birds ranging 1'-10' up in scrub,
especially bamboo. Quiet (until they see me). Flushing close together.
Not making very definite groups. Difficult to tell who is in lead. All
birds apparently taking insects from leaves and twigs.

Rain starting again 8:45 a.m.

Starting down hill 8:50

9:05 7870 ft. ^W See pair of Little striped Flycatchers 4 ft up in
bamboo scrub. Noisy, but apparently alone.

9:15 7470 ft. Near more ^W ~~than~~ R's. NODWA

9:26 7550 ft. Near road. Region of thick, fairly high, but young-
looking second growth. See definite mixed flock. Very coherent, just que-
t. Includes at least 1 Basilantopus-type, 1 White Spectacle, 1 Tit (su-
rely this is the lowest I have ever seen Tit?), 1 Black & White Manakin
(probably same species as in Sierra de Merida). All birds 6-12 ft up.
121 Basilantopus-type apparently in lead.

Leaving 9:37 a.m.

GENERAL COMMENT: It is quite probable that I have seen
more flocks (per hour of observation) here than in the Central and West-
ern Cordilleras. But the flocks here certainly are much smaller, on the
average, and less highly (or tightly) integrated.

The social behavior of the birds here seems to be perfectly
intermediate between that of the birds in the Central and Western Cordi-
lleras and that of the birds in the Quito region.

NOTE: The "Luteovirens-types" seen in Eastern Andes also
could be B. superciliosus !!! Bogota collection includes specimen from Par-
ano de Guaxo! (Muls de Schauensee describes it as "subtropical")

September 17, 1965 - S. of Bogota

Started out this morning to look for the lagunas de Chusacal. Take road to Urua and El Hato. Go way past the lakes and arrive at area called Santa Rosa. Hyper border AS, where it touches Paramo. Unfortunately, there are a lot of farms around here, and the rural looks rather poor and cut up. Time of arrival 5:40 a.m. Completely light. Cold. But sky clear and no wind. Altitude 10,400 ft.

See lots of sooty Thrushes alone along road on way here. Quite a lot of bird song 5:45 a.m. Lots of species must be breeding here now.

Incidentally, this area faces almost due East.

Lots of Atlapetes Whistle Song 5:45 - 6:00 a.m. Coming from local AS. Presumably PL's, but phrases are a little more elaborate (including 1 or 2 more notes) than those of the birds at Guasca. NODWAH. Then Atlapetes shuts up.

6:08 a.m. See pair PR Atlapetes 1-2 ft up in second growth edge of pasture. Very noisy. Lots of "greeting chatters and twitters." But definitely alone.

Hummer? Then we single Black Duglona (Hummer?) perched 10 ft up in AS 300 yds away. Silent and alone. Flies away immediately.

Then we another single Sooty Thrush alone. Silent in AS.

6:22 a.m. See single Whitebeard. Silent & alone in isolated patch AS in pasture 1-6 ft up.

Hummer? There are some cup shaped dark red flowers here. Presumably usual species. See a single Haplophragma or Eriocnemis feeding on them. Possibly species no VII. Silent and alone. Flies off immediately.

Back to area where first Atlapetes heard. Feeding 6:28. Bird is singing again NODWAH.

Then hear *Turdellus* in distance, down hill
Going down hill myself. See more single sooty *Thraupes*, silent and alone, in AS.

Then see a couple of Whitebeards. Flying but alone. 20 ft up in AS.

This is all too reminiscent of the upper parts of Pico Espozo!

6:55. See single *Synallaxis* alone. This is species with light supercilial stripe. Bird is silent. 1 ft up AS. edge pasture.

6:58. Hear White spectacled song down hill. NODWAH. Then see one White spectacled song a few minutes later. (still) NODWAH.

7:07. 10, 100 ft. See single Black *Diglossa* 8-10 ft up in second growth with AS. Picking insects off leaves. Silent. Also hear a White beard about 20 ft away. And this is not far from singing White spectacled. Could this be a very diffuse flock? Or the "forerunner" of a flock?

More sooty *Thraupes* alone. On ground in pasture. Silent.

Then see group of Whitebeards fighting among themselves. 10, 150 ft. Very noisy. But (still) apparently alone.

7:15 - 7:45 a.m. See some "mixed flock" behavior. But rather peculiar. First hear White spectacled song. Slightly down hill. Obviously same bird heard singing before. NODWAH. Then White spectacled shuts up. Then I hear some Hummer song coming from the same general area. Also NODWAH. Then Hummer shuts.

Then I see 2 Rufes and 2 Woodcreepers II close by. This is exactly the same area where Whitebeard fight was seen a few minutes earlier. It also is about 100 yds up hill from where White spectacled and Hummers heard singing.

Both Rufes and II's are hanging 4-10 ft up in second growth AS. Quite close together when first seen. II's f —————> Rufes repeatedly. II's usually 1-4 ft behind Rufes. II's looking for insects on twigs and twigs and in moss. Rufes picking insects off leaves. But also apparent

whom.

All this time, White-spectacled continues to approach. Also continues to sing from time to time. Songs NODWAH. Ruf also utter more "Greeting" "Twitters". NODWAH. I.E. not overlapping White-spectacled songs.

When White-spectacled songs are only 20-30 ft away, Ruf suddenly fly over in their direction. $\text{TW}'s \rightarrow$ Ruf. Then I see 2 Ruf and 2 White-spectacleds close together 10-15 ft up in AS tree!

I think that the Ruf and White-spectacleds must be said to have joined one another!!!

NOTE: While I am writing this account, I get several more glimpses of both White-spectacleds and Ruf. Sometimes close together. Sometimes far apart. White-spectacleds continue to sing from time to time. And Ruf also utter more "Greeting" "Twitters". Quite variable (described elsewhere). And there are absolutely no overlaps between their vocalizations! I.E. there seems to be mutual song inhibition between Ruf and White-spectacled!!!

Certainly, the Ruf, TW's, and White-spectacleds must be considered to have formed a real, organized mixed flock. But it was extremely variable, in degree of coherence. Sometimes very diffuse. (Probably the Whitebeards also were "real" members of the same social group.)

The Ruf may be just as "strongly" Allogregarious as sitticolor forms or WCC's, insofar as they react to (and with) other species approximately as frequently. But they apparently differ from both sitticolor forms and WCC's insofar as they do not always keep as close to other species. They apparently do not become "upset" at being left alone temporarily, or being separated from their companions by distances of 50-100 yds. I suppose that this is what one would expect of a commensal species in an environment where flocks often are diffuse.

NOTE: Inters may be partly intermediate between Ruf and typical

Yum
WCC
Ruf
WCC
Ruf
WCC
Ruf
Yum

al. Either in their Allogregarious behavior. (And possibly WCC's are rarer or absent in many areas because they have difficulty in "adjusting" to dry pine forests ???)

NOTE: The scrub here is relatively sparse. All or most of it (even the stuff I have been calling "AS" probably is second growth). This scrub is probably sparser than that preferred by utricolor forms. (Of course, Ruf also differs from utricolor insofar as they apparently never occur in trees. Ruf → utricolor → WCC form a nicely graded ecological series !!!)

8:40 a.m. Same area. White spectacled still singing occasionally. NODWAH. It has been a long time since I heard either Ruf or TH's. Have they gone off together? Leaving the Whitestart behind?

NOTE: The White spectacled may be quite as Allogregarious as the Yellowface. Only more restricted in altitudinal distribution in some areas. (This probably is the highest I have ever seen the White-spectacled.)

Going back uphill.

Leaving 9:15 a.m. Everything dead quiet.

NOTE: Talking to the local people, I find that Santa Rosa is well past El Hato.

Apr. 15, 16, 18, 21,
23, 24

Eastern Cordillera Colombia - Prairie
Mts. above Bogotá - April, 1963 Eucalypts

No. Inds. Seen Alone

(40) IIII IIII IIII IIII IIII IIII IIII IIII IIII
IIII IIII IIII IIII

(15)

No. Inds. in Flocks

IIII IIII IIII IIII IIII IIII IIII IIII IIII
IIII

(34)

31.20%

10.32
inds per hour

No. Flocks Seen

IIII IIII IIII

No. H. P. Flocks Seen

IIII

Largest No Inds in Flock

8

No. Sp. Per Flock

4

2

2

4

2

4

2

2

2

(10) 2

2

2

2

2

Eastern Cordillera Colombia

*Prunus
Eucalypto*

Hours Spent

| | |
|----------|--------------|
| April 13 | 1 hr 00 min |
| April 16 | 1 hr 45 min |
| | 0 hrs 30 min |
| April 18 | 1 hr 30 min |
| | 2 hrs 00 min |
| April 21 | 1 hr 30 min |
| Apr 23 | 1 hr 30 min |
| Apr 27 | 2 hrs 45 min |

12 hrs 30 min

Revised Eastern Cordillera Colombia
Mts above Bogotá, April, 1965

Apr 15, 16,
18, 21, 25, 27

Indiv

No Inds seen Alone

|||||
|||||
|||||
|||

(153)

No Inds in Flocks

|||||

(41)

(257)

24.26%

No. of Flocks seen

|||||

No. H.O. Flocks seen

|||||

Largest No. Inds / Flock

5
4
4

No. Inds Per Flock

4
2
2
2
5
4
2
3
2
2
2
4
2

36

Revised

Indusnie

Mts above Bogotá - April 1963

| | | |
|---------|--------|---------|
| Apr. 15 | 3 hrs | 15 min. |
| | 1 hr | 30 min. |
| Apr. 16 | 3 hrs. | 30 min. |
| | 1 hr | 15 min. |
| Apr. 17 | | 0 |
| Apr. 18 | 3 hrs | 15 min. |
| | 2 hrs | 00 min. |
| Apr. 19 | | 0 |
| Apr. 20 | | 0 |
| Apr. 21 | 2 hrs | 15 min. |
| Apr. 22 | | 0 |
| Apr. 23 | | 0 |
| Apr. 24 | | 0 |
| Apr. 25 | 1 hr | 45 min. |
| Apr. 26 | | 0 |
| Apr. 27 | 3 hrs | 00 min. |

21 hrs 45 min.

Eastern Cordillera Colombia

Hours Spent

August 20 2 hrs 00 min

August 21 3 hrs 00 min

2 hrs 00 min

August 24 2 hrs 15 min

August 23 2 hrs 15 min

11 hrs 30 min

Apr. 17, 1965
22, 23.

Quasca - April, 1965

No. of Inds Seen Alone

|||||
|||||
|||||

(108)

No. of Inds. in Flocks

|||||
|||||

(63)

(173)

37.51 %

No. of Flocks Seen

||||

No. Sp. Per Flock

4 ✓

3 ✓

6

3

3

2

6

6

6

2

No. H.O. Flocks Seen

||||

Largest No. Inds One Flock

8

10-13

7

41

Apr. 17, 17, 22, 23

Eastern Cordillera Colombia

Genova - April 1965

No. Inds. Seen Alone

(30) ~~|||||~~
~~|||||~~

(30)

No. Inds. in Flocks

(30) ~~|||||~~
~~|||||~~

(30)

42.45%

10.69 inds
per hour

No. Flocks Seen

~~|||||~~

No. H. G. Flocks Seen

~~|||||~~

Largest No. Inds. in Flock

~~13~~

No. Inds. per Flock

2

2

5

6

4

3

4

11

Eastern Cordillera Colombia

Quilaca - April 13, 1965

Hours Spent:

| | | |
|---------|-------|---------------------------------|
| Apr. 14 | 3 hrs | ¹⁵ 00 min |
| Apr. 19 | 3 hrs | 00 min |
| Apr. 22 | 3 hrs | 10 min |
| Apr. 23 | 3 hrs | 45 min |

13 hrs ~~30~~ min

Aug 22, 24

Eastern Cordillera Colombia

Quarea - August 1962

No. Birds Seen Alone

|||||

(41)

No. Birds in Flocks

|||||

(20)

89.85%

9.24 birds
per hour

No. Flocks Seen

||||

No. Sp. per Flock

3

14

2

3

2

No. W.O. Flocks Seen

1

Largest No. Birds. 1 Flock

8

Eastern Cordillera Colosagua

Quana - August 1965

Hours Spent:

August 22

4 hrs 00 min

August 24

3 hrs 15 min

7 hrs 15 min

Aug. 22,
24.

Grass - August, 1965.

No. Inds Seen Alone

|||||
|||||

(61)

No. Inds in Flocks

|||||

(15)

12.74%

(136)

No. Flocks Seen

|||

No. Inds per Flock

3

4

3

13

No. H.O. Flocks Seen

1

Largest No. Inds One Flock

3

8

4

Apr. 24, 25

Eastern Cordillera Colombia

Agua Bonita - April 1925

No. Birds Seen Alone

III III III III III

No. Birds in Flocks

III III III III III III III

(24)

(39)

61.90%

17.64
birds per hour

No Flocks Seen

III

No. Sp. Per Flock

14

2

8

No. H. O. Flocks Seen

III

Largest No. Birds 1 Flock

23

Eastern Cordillera Colombia

Agua Bonita - April 1965

Hours Spent:

April 24

4 hrs 00 min

April 25

4 hrs 15 min

8 hrs 15 min

Eastern Cordillera
Cigua Boneta - April 1955

Apr 24 25

No Inds seen Alone

|||||

(24)

No Inds in Flocks

|||||

(41)

60.29%

(68)

No Flocks seen

|||

No Inds Per Flock

15

9

2

No H.O. Flocks seen

|||

26

Largest No. Inds in One Flock

26

15

2

Aug 20, 23, 26

Eastern Cordillera Colombia

Agua Bonita - Aug. 1965

No. Inds. seen alone

|||||

(43)

No. Inds. in flocks

(30) |||||
(100) |||||
|||

(112)

72.26%

11.92 inds
per hour

No. Flocks seen

|||||

No. W.O. Flocks seen

|||||

Largest No. Inds. in flock

16

No. spp. per flock

2 2

3 4

2

11

7

2

2

4

4

(10) 7

3

2

5

8

Eastern Cordillera, Colombia

Aguila Bonita - August 1963

Hours Spent

August 20 4 hrs 30 min

August 23 4 hrs 30 min

August 26 4 hrs 00 min

13 hrs 00 min

Eastern Cordillera Colombia

Aug 20, 23
26

Agua Bonita - August 1965

No Inds seen Alone

|||||

1

(31)

(172)

70.35%

No Inds in Flocks

|||||

(121)

No Flocks seen

|||||

No H.O. Flocks seen

|||||

Largest No Inds 1 Flock

3

19

14

No. Inds per Flock

2

3

2

11

7

3

2

4

4

7

5

2

5

9

2

4

172

25

20

27

Sept. 28, 29, 30

Eastern Cordillera

Quasca, Sept. 1962, Oct. 1962

No. Inds. seen Alone

|||||

38

47.95%

No. Inds. in Flocks

|||||

35

||||

(73)

No. spp. per Flock

2

6

5

9

22

No. Flocks seen

||||

No. H.O. Flocks seen

||||

Largest no. Inds. in Flock

2, 10, 16

Sept. 28: 6:45 - 9:30 = 2 hrs 45 min

Sept. 29: 5:45 - 9:30 = 3 hrs 45 min

Sept. 30: 5:45 - 10:00 = 4 hrs 15 min

10 hrs 45 min

~~Oct. 22: 5:45 - 9:00 = 3 hrs 15 min~~